Corruption Distance and FDI in Africa

A Research Report

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by

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ABSTRACT

The majority of empirical studies that investigate the relationship of corruption and FDI tend to find that there is a strong relationship between corruption and FDI, although the findings are mixed in this regard; some have found the opposite while others have resulted in inconclusive results. This paper uses an institutional approach to corruption and seeks to advance the concept of "corruption distance" as it relates to FDI in context of Africa, it therefore investigated the manner in which the perceived level of corruption in the African continent affects the level of FDI counties in Africa are able to attract.

The paper analyses corruption and FDI where the home countries are developing economies in Africa in order to obtain a greater insight regarding relationships in African investment using a panel data set of 45 African countries from 2003 to 2013. The research findings support the view that corruption distance has a negative effect on FDI in Africa. Given the levels of corruption in Africa, even expectations that more corrupt countries would be more likely to invest in less corrupt countries where confirmed. Our evidence confirms that the flow of FDI in Africa is mostly influenced by countries who on average are less corrupt that African countries. The paper finds that that there is a negative relationship between corruption and FDI where the home country is less corrupt than the host African country and concludes that the potential for FDI towards Africa to be great if the institutional quality underpinning the investment climate in African countries where to improve.

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GLOSSARY OF TERMS

CPI	Corruption Perception Index
ECA	Europe and Central Asia
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GLS	Generalised Least Squares
GRETL	GNU Regression, Econometrics and Time Series Library
HDI	Human Development Index
IMF	International Monetary Fund
MNE	Multi-National Enterprise
UN	United Nations
OECD	The Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
USA	United States of America
WE/EU	Western Europe/European Union

CHAPTER 1: INTRODUCTION

1.1 Background

In 2016, the Fiscal Affairs and Legal Department of the International Monetary Fund (IMF) attributed the consequence of bribery related activities to a tune of up to $2 trillion (IMF, 2016). The IMF further reports that the "overall economic and social costs of corruption are likely to be even larger" and has identified key channels of growth in which corruption has a negative effect. These refer to key state functions such as fiscal policy, policy formulated by the country reserve banks as well as other institutional mechanisms that are required to promote trust and certainty in the manner in which governments and countries interact with its citizens in the allocation of resources (ibid).

Jain (2001) describes the definition of corruption, which will be used in this thesis, in the following way:

> "Corruption, defined more comprehensively, involves inappropriate use of political power and reflects a failure of the political institutions within a society. Corruption seems to result from an imbalance between the processes of acquisition of positions of political power in a society, the rights associated with those positions of power, and the rights of citizens to control the use of that power. Power leads to temptation for misuse of that power. When such misuse is not disciplined by the institutions that represent the rights of the citizens, corruption can follow" (p. 3).

It is from this definition that the concept of corruption and its impact on FDI will be analysed, discussed and interpreted. Additionally, the World Bank reports on the negative effects that are observed as a result of corruption pertaining to the following cost implications, where corruption:

- Increases the cost and risk of operating, and the uncertainty created in a locality;
- Results in sub-optimal economic outcomes that could have been obtained through the use of fewer resources;
- Is detrimental to future investment made locally and abroad;

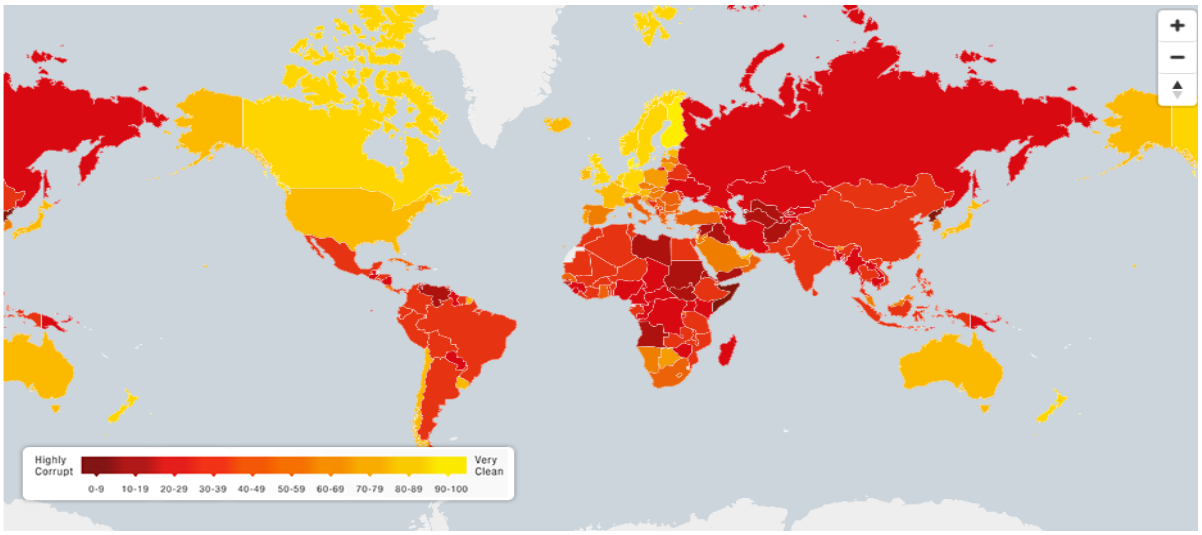
- Results in effort being directed to rent seeking instead of value creation activities, and changes the way in which firms optimise their resources; and
- Creates an environment where companies start to operate in the black market resulting in losses of tax revenue for the state. (World Bank, 1998)

These drawbacks of corruption, and related effects on economic growth and development have been supported by contemporary thoughts of Mauro, who in his respective studies, presents evidence indicating that corruption negatively affects the economic growth of countries (Mauro, 1995,1997).

The prevalence of corruption seems to also have a correlation with the institutions of countries (Lederman, Loayza, & Soares, 2005), (Svensson, 2005). Institutional strength and capacity to influence policy direction and discourse has been one of the central pillars determining corruption and the extent to which it influences perception of the society (Jain, 2001), mainly because it is the effective functioning of these institutions that bring credibility to the mechanisms available to combat the scourge of corruption. The funding of countries through the World Bank and bilateral country arrangements has historically as well as currently sought to strengthen institutional capacity of countries to enable growth and developmental objectives to thrive (Dollar & Levin, 2005). These scholars were of the opinion that development aid has the most impact in countries that have sound institutions (Dollar & Levin, 2005).

Post 1993 era renewed emphasis on global development to focus on corruption signaled by the formation of Transparency International in 1993 (Transparency International, 2017). After the financial crises of 2008, slow growth and rising debt in many countries resulted in increased competition amongst countries for the attraction of investment that creates internal employment and unlike trade, does not have the added risk of funding future budget deficits in order to spur growth, finance increasing government spending, and reduce unemployment (UNCTAD, 2015). The last decade has also seen development and promulgation of socially responsible standards that focus on Multi-National Enterprises and investment and the international rules supporting these (UNCTAD, 2015).

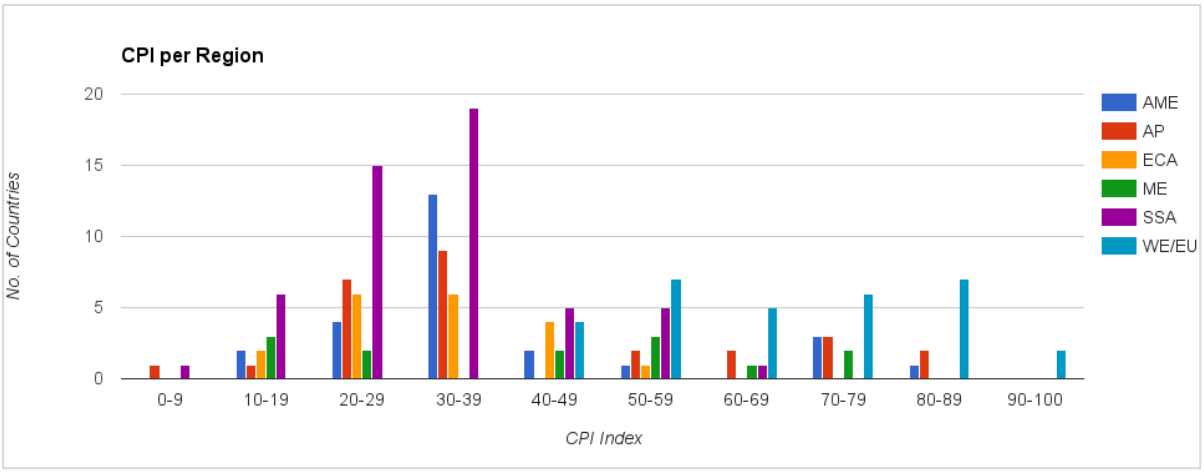
Figure 1: World Corruption Prevalence



Source: Transparency International (www.transparency.org/cpi2015)

Figure 1 above is a visual indication of the prevalence of perceived corruption in the world as described by the index developed by Transparency International, also referred to as the Corruption Perception Index (CPI) (2015). The measurement of the level of corruption is rated from 0 (highly corrupt) to 100 (clean). As the map illustrates, there is a prevalence of countries in the world that are perceived as leaning towards a highly corrupt level, with a few countries predominantly in Western Europe and North America leaning towards very clean. The map seems to suggest that the majority of the world economies are plagued with challenges of corruption.

Figure 2: World CPI per Region

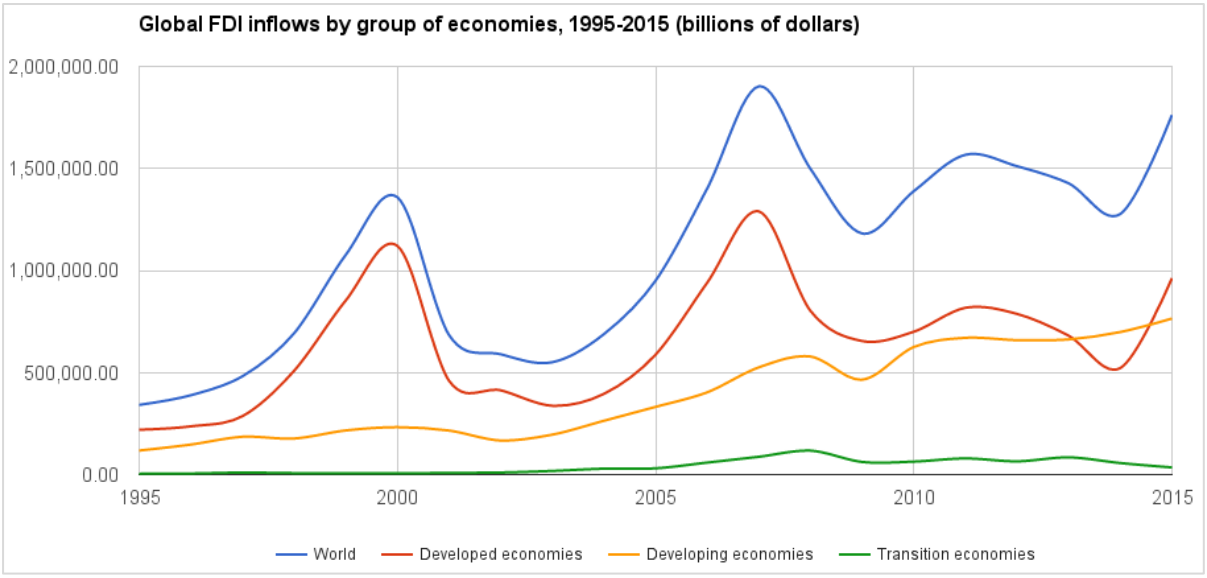


Source: (Transparency International, 2015)

The chart above illustrates the perception of corruption in Africa using the CPI index compared to the rest of the world. Out of the 52 African countries included, 46 (88%) show a serious corruption disposition (below a score of 50). The Europe and Central Asia region (ECA), which excludes the European Union, shows the highest percentage of countries (95%) with serious corruption problems, the best performing region being Western Europe (WE/EU) at 13%. An overall observation shows that 68% of countries in the world have a serious corruption problem.

With the fall of communism and increased effort towards globalization, the 1990's witnessed an increased role of Foreign Direct Investment (FDI) (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2004: 1). The trend has continued since as can be seen in the chart below:

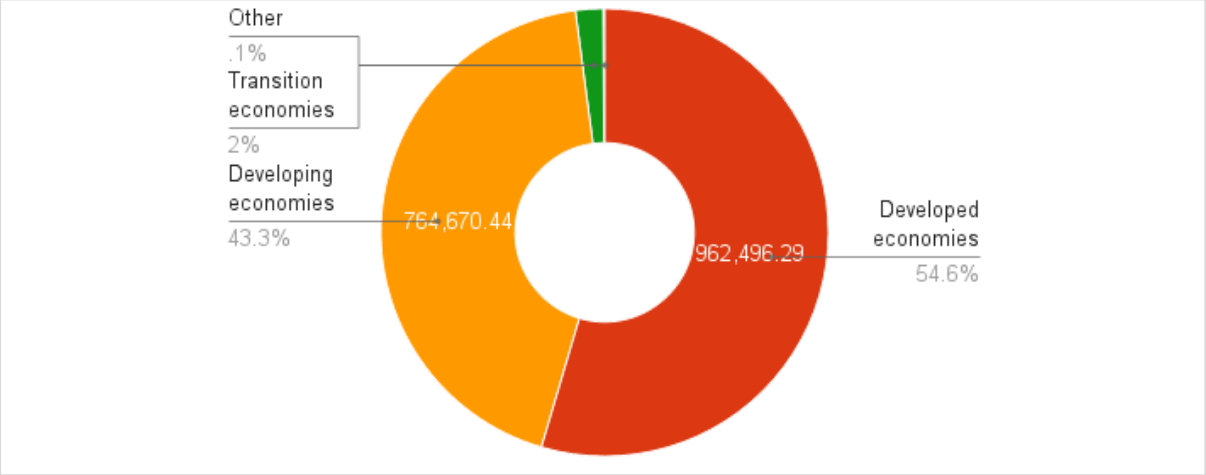
Figure 3: Global FDI inflows by group of economies, 1995-2015 (billions $)



Source: (UNCTAD, 2016)

By 2015, FDI flows to developing economies comprised 43% of the global FDI flows. The preceding year, this figure was 55%. The global growth in foreign controlled investments show

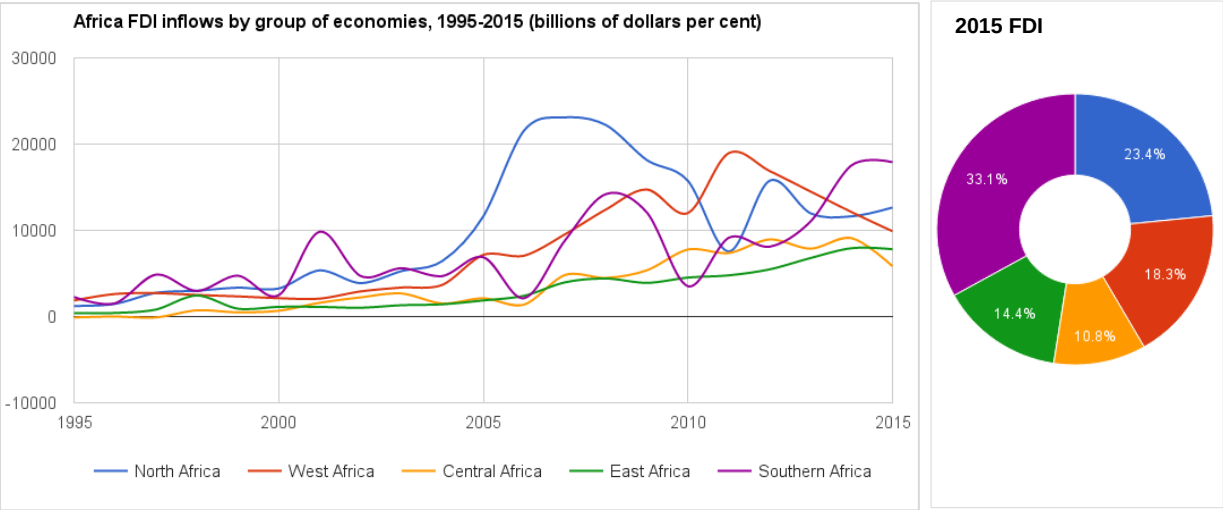
Figure 4: Share of global FDI inflows by group of economies 2015 (billions $/cent)



Source: (UNCTAD, 2016)

a greater level of rate progression than most other foreign investment flows (Blonigen, 2005). It is these trends according to Blonigen, that have resulted in amplified interest in the academic fraternity and have spurred the growing investigations into the drivers of FDI activity (2005). When observing developing country FDI flows, specifically African FDI flows, the growing trend in FDI is also detected.

Figure 5: Africa FDI inflows by group of economies, 1995-2015 (billions $/cent)



Source: (UNCTAD, 2016)

North Africa by far has been the main beneficiary of cumulative FDI since 1995 (31% of African FDI), followed by West Africa and Southern Africa. The regions of Central Africa and East Africa have been the worst performing regions in the African continent during this period (World Investment Report, 2016). FDI, as seen in the Fig 1.5 above, has been resilient

during the Asian financial crises that transpired during 1997 and persisted in the following year. This is true also for the more recent 2008 crisis. The resilience of FDI is also observed in the Mexican crises of 1994-1995 and the Latin American crises of the 1980's, this evidence, which as suggested by Assaf et al (2001), has led to Developing Countries favoring this form of capital flow.

Corruption and its effects on FDI or growth has been studied by a number of scholars (Wei 2000; Mauro 1995, 1997; Ahmad et al 2012). The majority of studies in this area have consistently found economic growth and corruption to be negatively correlated and have supported similar conclusions regarding corruption and FDI.

1.2 Research Problem

Much of the research investigating corruption and FDI uses cross sectional data that involves various host countries in different stages of development, localities, political stability and a few source countries which usually tend to be from developed economies. The socioeconomic effects of corruption, coupled by the prevalence of this phenomenon in Africa, imply a requirement for the continued development in the understanding of corruption as a determinant of FDI.

To the researcher's knowledge, an investigation that probes the relationship of corruption to FDI in bilateral investments where the host countries are developing economies in Africa and the consideration of how the relative corruption amiability of these countries may affect FDI decisions, has not been performed. In essence, the question of corruption distance, defined as the differences in corruption levels between host and home countries (Habib & Zurawicki, 2002) has not been performed. Corruption distance as a variable in this study has not been investigated regarding relationships in Intra-African investment. Given the resilience observed by the flow of FDI for various economic regions, and the preference for developing countries to favour FDI, it is consequently important to understand whether the growth in FDI, in intra African commerce, is negatively affected by corruption considering the literature that suggest that entities and institutions that originate from corrupt countries (that

experience high levels of corruption) are not unduly influenced by corruption emanating in host countries when making decisions on providing FDI (Godinez & Liu, 2015).

1.3 Research question

The study will explore the following research questions:

- Does the perception of corruption in Africa affect the capability of African countries to attract foreign direct investment from investor countries?
- Is the effect of corruption distance on FDI significant in Africa?

1.4 Objective of the study

The study seeks to investigate whether corruption distance negatively affects foreign direct investment when investment involves an African country as source of FDI and another African country as the host as well as to explore whether corruption distance plays a role in determining the flow of FDI in Africa. The objective could thus be decomposed as follows:

1. Confirming the effect of corruption on FDI inflows in Africa
2. Confirming whether corruption distance has an effect on FDI where the home countries are more corrupt than the host country.
3. Confirming whether corruption distance has an effect on FDI where corruption in the home countries is less than found in the host country.

1.5 The significance of the study

The research questions posed, are significant from a theoretical and policy perspective. From a theoretical perspective the research would add to the current literature exploring the relationship between corruption and FDI as well as expands the understanding of the variables important in the determination of FDI in Africa. From a policy perspective, an understanding of the determinants of FDI in Africa, will assist governments and policy makers to consider the aspects that drive FDI in Africa and develop appropriate economic policy interventions to stimulate investment on the continent.

CHAPTER 2: LITERATURE REVIEW

2 Introduction

What makes firms invest abroad through acquiring long term interests in foreign markets? What are the reasons that determine the location for investment and are these reasons the same for MNE's (Multi-National Enterprises) that operate in Africa? How does corruption play a role in the decisions made by MNE's regarding investment in foreign countries? The first section of this chapter will explore corruption as a concept. The different definitions regarding corruption will be explained and the theoretical classifications defined. The concept of FDI will thereafter be defined, followed by a short overview of the investment theories that laid the theoretical foundations from which FDI theory emerged.

The second part of the chapter will discuss the theories and theoretical approaches relating to the drivers or determinants of FDI, and the underlying components that have been advanced to explain the concept. Focus will then be placed in the analysis of some of the theories that have explored the determinants of FDI from an institutional point of view. The chapter will proceed by discussing the different views regarding the role of corruption in deterring and, as well as in promoting FDI. The introduction of the concept of corruption as a form of institutional deficiency as well as the key research concept of corruption distance will be presented to conclude the theoretical literature under consideration.

2.1 Corruption

Corruption has been a subject of concern all over the world for a considerably long time. One of the earliest references of corruption come from sources as early as the 4th century B.C. where Kautiliya (1915) the Prime Minister of the India as he then was deposes that,

> "Just as it is impossible not to taste the honey (or the poison) that finds itself at the tip of the tongue, so it is impossible for a government servant not to eat up, at least, a bit of the king's revenue. Just as fish moving under water cannot possibly be found out either as drinking or not drinking water, so government servants employed in the government work cannot be found out (while) taking money (for themselves)" (p. 96).

Other orthodox scholars who surveyed the political ideas such as Plato, Thucydides and Machiavelli, have described corruption and its effect on societies and the "distributions of wealth and power relationships between leaders and followers" as explained by Johnston (2001: 12). The author describes that in this period, the issue of corruption had been seen from the lens of politics, as "a social process, with corruption referring at least as much to the ends and justifications of political power as to the ways it was used and pursued". Corruption also became to be explained in terms of the social and ethical description in much later years, with authors such as Frantz Fanon exploring factors such as the "national consciousness" of newly independent regimes and how inevitably they fall in the trap of corrupt practices (Fanon, 1961: 98).

2.2 Definitions of corruption

The modern definitions of corruption are based on "explicitly public roles endowed with limited impersonal powers". as According to Johnston corruption can be divided into the behavior classification definitions and the neo classical definitions (Johnston, 2001):

2.2.1 Behavior classification definitions

These forms of definitions of corruption, explain the phenomenon as "an abuse of public power" for the "private benefit" of an individual and/or group. Definitions in this space of classification usually struggle with the articulation of the meaning of concepts such as "private", "benefit", "public" as well as what, within the context of the exercise of power, constitutes "abuse" (Johnston, 2001). Debate around the definitions of such concepts and the manner in which these concepts have been explained range between those that espouse an objective view, as can be found in law, to those that advocate social standards for definition. Such studies according to Johnston, often recognize that cultural opinions and other ethical standards vary across regions (Johnston, 2001) .

2.2.2 Neoclassical definitions

Neoclassical definitions of corruption try to define corruption as not only a result of a behavior or action that can be deemed as corrupt but rather an issue with the processes of politics and the manner in which political power is gained, retained and exercised (Rogow and Lasswell 1963).

2.3 Corruption in literature

The literature on corruption does not settle the debate regarding the definition of corruption. Further complicating the issues of the definitions of corruption is the fact that it is problematic to measure. Given that corruption occurs, the activities of corruption are normally hidden from view resulting in a conundrum regarding how to measure the extent of the actual occurrence of corruption. Secondly, the type and frequency of corruption can vary widely in different regions making comparative assessments difficult.

According to Ahmad et al (2012) corruption has up until the 1980's, been confined to the fields of sociology, history, public administration and criminal law, with an increasing focus in the field of economics in in the years leading to 2012. In October 2006, the Nobel economist, Joseph Stiglitz attributes much of the effort and credit in recent times to put corruption on the agenda of the World Bank "against opponents who regarded corruption as a political issue, not an economic one, and thus outside the Bank's mandate" (2016, p. 1) as a result of research he conducted to show the systemic relationships that corruption share with economic growth. He further states that:

> "The World Bank's primary responsibility is to fight poverty, which means that when it confronts a poor country plagued with corruption, its challenge is to figure out how to ensure that its own money is not tainted and gets to projects and people that need it (p. 2)."

These definitions of corruption, together with the popularisation of corruption as an economical as well as a political issue highlights the following important points that are summarised by this research regarding how the understanding of corruption is to be developed in this thesis:

i. It incorporates social and ethical standards that vary amongst regions
ii. It involves a process of politics (the manner in which political power is gained, retained and exercised)
iii. It is a political as well as an economic issue
iv. It involves an abuse of power

Jain (2001) brings these elements together with an appreciation of political institutions in this comprehensive definition of corruption:

> "Corruption, defined more comprehensively, involves inappropriate use of political power and reflects a failure of the political institutions within a society. Corruption seems to result from an imbalance between the processes of acquisition of positions of political power in a society, the rights associated with those positions of power, and the rights of citizens to control the use of that power. Power leads to temptation for misuse of that power. When such misuse is not disciplined by the institutions that represent the rights of the citizens, corruption can follow" (p. 3).

When corruption does follow, a vast body of literature on corruption argues that corruption increases the operational cost of business, creates uncertainty and deters growth (Acemoglu, Johnson, & Robinson, 2005; Acemoglu, Johnson, Robinson, & Thaicharoen, 2003; Andrei Shleifer, 1993; Hall & Jones, 1999; Mauro, 1995). These strands of literature can be said to be classified under the *sanding-the-wheels* hypothesis which argue that corruption hinders economic activity. Other strands of studies of corruption espouses that corruption "greases the wheels of commerce" or is detrimental to economic activity (*greasing the wheels hypothesis*) and may even allocate investment and time more efficiently (Tanzi, 1998). This argument has been described by Bardhan (2013) as an extension of (Leff, 1964) who argues the following:

> "….if the government has erred in its decision, the course made possible by corruption may well be the better one (p.11).

2.4 Definition of FDI

The IMF (IMF, 2007) identifies five (5) different classifications of financial transactions used in International accounts: "Direct Investment; Portfolio Investment; Financial Derivatives (other than reserves) and Employee Stock Options; Other Investment; and Reserve Assets"(p. 99).

These classifications are characterised based on economic motivations and the behaviour they exhibit, e.g., Portfolio Investments differ from Direct investment in that the latter "is related

to control or a significant degree of influence, and tends to be associated with a longer term relationship" (International Monetary Fund, 2009, p. 99).

The definition of FDI promulgated by the OECD (2008) is as follows:

> "Direct investment is defined as "a category of cross-border investment made by a resident entity in one economy (the direct investor) with the objective of establishing a lasting interest in an enterprise (the direct investment enterprise) that is resident in an economy other than that of the direct investor……. The main motivation of the direct investor is to exert some degree of influence over the management of its direct investment enterprise(s) whether or not this entails exercising a controlling interest. However, in many, if not most cases, the relationship is strong enough that the direct investor will control the direct investment enterprise. The motivation to significantly influence or control an enterprise is the underlying factor that differentiates direct investment from cross-border portfolio investments" (p. 17).

2.4.1 Concepts in defining FDI

From these definitions, the concepts of **residence** and **degree of influence** form the core of the definition of FDI. In this context, the United Nations identifies the "resident" in an economy as different from either citizenship or nationality (United Nations, 2009). Residents include "governments, incorporated companies, unincorporated businesses, societies, partnerships, individuals, households, non-profit organizations and unions" that have an economic interest and have engaged in economic activity at a significant scale for more than one year or intends to do so as suggested by the IMF (International Monetary Fund, 2009) in this definition:

> "The residence of each institutional unit is the economic territory with which it has the strongest connection, expressed as its centre of predominant economic interest. Each institutional unit is a resident of one and only one economic territory determined by its centre of predominant economic interest……An institutional unit is resident in an economic territory when there exists, within the economic territory, some location, dwelling, place of production, or other premises on which or from which the unit engages and intends to continue engaging, either indefinitely or over a finite but long period of time, in economic activities and transactions on a significant scale. The

> location need not be fixed so long as it remains within the economic territory. Actual or intended location for one year or more is used as an operational definition" (p.70).

Control or Degree of influence is the degree control over management decisions that is obtained via funds, supply of additional contributions such as technology, management, intellectual property, marketing and other assets. The IMF (2009) describes Control or Influence in the following way:

> "Control or influence may be achieved directly by owning equity that gives voting power in the enterprise, or indirectly by having voting power in another enterprise that has voting power in the enterprise" (p.101).

2.5 Theoretical overview of Trade and Investment

There is no agreed model in the literature of FDI that explains the determinants of FDI. The most common questions regarding understanding FDI activity are around what informs the decisions of an entity to set up in a different country for production rather than export or engage in licencing arrangement in the chosen destination (Blonigen, 2005). In his assessment of the causes of FDI, Blonigen categorises FDI decisions into two main groups which have an internal and external orientation.

Internal firm characteristic factors that affect MNE decisions are explained by Blonigen in terms of the internal intangible assets in a firm that can be replicated elsewhere without diminishing their use in the firm. The author further explains that the decision regarding additional production in the local environment versus moving production to another country is explained in terms of the market failure of these intangible assets (Blonigen, 2005).

The external characteristics the author describes are those of Exchange Rate Effects, Taxes, Institutions, Trade Protection and Trade Effects. These external macro-economic factors according to Blonigen affect MNE foreign investment decisions. The consideration for these external characteristics are summarised below:

1. Exchange rate effects - An exchange rate change may have an impact on the value of an asset that an MNE invests in with different consequences. A depreciation of a foreign currency can result in an opportunity to buy an asset at a cheap price,

motivating the MNE to either invest at the reduced price or to hold off investment in if the anticipation is that the currency will continue depreciating and value will be lost in the long term. Conversely, an appreciation in the foreign currency could lead to the appreciation of the asset in the long term and the MNE may make a decision to invest promptly before the price of the asset appreciates further.

v.

2. Taxes – Higher foreign taxes in a foreign country relative to the investor's home country or to an alternative investment destination may be a consideration an MNE makes before making a long term investment decision. Moreover, the methods in which double taxation is treated in the home and host country especially when earnings are repatriated back into home country may affect decisions to invest in a particular jurisdiction.

vi.

3. Institutions – The quality of institutions in a foreign country can impact the ability to protect MNE assets invested abroad and could be critical in an MNE's FDI decision. Furthermore, if the quality of institutions required for well-functioning markets in a foreign country may be an important consideration before investment.

vii.

4. Trade Protection – The degree to which trade protection prevents an MNE to trade products in a foreign locality may result in a decision to produce the product in the foreign location instead or find a country where this would not be a requirement.

viii.

5. Trade Effects – Trade considerations such as a matured market in the MNE's country could compel the MNE to look for new markets.

ix.

Theoretical literature dealing with FDI developed parallel to the theory of trade, and in fact, according to Blonigen, it is helpful to understand the development of the investment theory that deals with FDI by understanding the theory of trade which dealt with similar topics (Blonigen, 2005). The author further explains that until as recently as the 1990's, "trade theory and trade empirics rarely crossed paths" and the majority of trade theory was dominated by the "general equilibrium theory" of Heckscher and Ohlin. Faeth (2009) similarly traces the first models that try to explain FDI through models developed by Heckscher and Ohlin (Heckscher-Ohlin model), and MacDougal (1960) and Kemp (1964).

The Heckscher-Ohlin Theory of Factor Endowments builds on the theories of comparative advantage and absolute advantage. Decades earlier, Adam Smith had postulated (in his theory of absolute advantage) that in a situation of free trade, countries should specialise in the production of products that they can produce more efficiently than others, that can then be traded with countries that produce other products more efficiently (Smith, 1776).This theory relied on the premise that a nation is in a better position at producing greater outputs when given equal resources of certain products than another. In 1817, David Ricardo refined this theory further by introducing the idea of comparative (as opposed to absolute) advantage:

> "... the principle of comparative advantage: a nation, like a person, gains from the trade by exporting the goods or services in which it has its greatest comparative advantage in productivity and importing those in which it has the least comparative advantage." (Ricardo, 1817).

This period between 1776 and 1826 which propounded differences in factor empowerments, is recognised as the basis for the standard theory of trade (Sen, 2010). At this time, the reasons for the differences where not explained until the appearance of the Heckscher-Ohlin Theory of Factor Endowments.

The theoretical assumptions of the Heckscher-Ohlin Theory as described by Schott (2003) are as follows: "1. Productive factors (e.g. capital, labour) are perfectly mobile from sector to sector within a country, but immobile internationally; 2. Countries are small, open and possess perfectly competitive markets; and 3. Countries share identical, constant returns to scale technology" (p. 4).

The theory advances earlier trade theories by offering explanations for the differences in the factor endowments that result in comparative advantage. It further explains differences in production costs as differences in the supply of production factors. Thus according to Ohlin, products that require abundant resources and those that require scarce resources, are exported for those that require resources in the opposite direction (Ohlin, 1933). The theory therefore explains the existence of international trade as a consequence of uneven geographical distribution of productive resources that is exploited by countries as a result of a comparative advantage created because of this difference.

Under this theory, the premise is that for example, if a country is endowed in a natural resource such as bananas, in comparison to a country that does not have this resource, or has an insufficient amount of this resource, the country endowed with bananas will as a consequence trade bananas for another commodity that it requires. The assumption here is that an abundance of a factor of production results in a reduced price for the factor of production and thus provides comparative advantage in trade (Ohlin, 1933).

In reality however, the production of commodities such as bananas will utilise all the factors of production such as labour, capital and land, where a country that is not endowed with bananas may have more land or cheaper capital. With this in mind, the useful insight regarding the Heckscher–Ohlin theory is the understanding that traded commodities are a bundle of factors (labour, capital and land) in which the scarcity of these commodities may differ between two trading countries. The trade between countries is therefore an indirect factor arbitrage, transferring the means of production from abundant to resource scarce destinations (Leamer & et al, 1995).

2.6 Investment theories

2.6.1 Theories of FDI based on perfect competition

2.6.1.1 MacDougall-Kemp hypothesis

The MacDougall-Kemp hypothesis extends the Heckscher-Ohlin Theory in its focus on the price of capital. It is the only investment theory that is not primarily based on market imperfections and the imperfect capital market (Chigbu, Austin, Ubah, & Chigbu, 2015)
According to the hypothesis as described by Chigbu et al:

> "…….assuming a two-country model - one being the investing country and the other being the host country, and the price of capital , being equal to its marginal productivity, capital moves freely from a capital abundant country to a capital scarce country and in this way the marginal productivity of capital tends to equalize between the two countries. This leads to improvement in efficiency in the use of resources that leads ultimately to an increase in welfare" (p.2).

The theory suggests that even though the abundant country may lose capital as a result of the movement of funds to the investment destination, the national income will not fall as long as

the return received from this investment will on balance be greater (Chigbu, Austin, Ubah, & Chigbu, 2015).

The MacDougall-Kemp theory focuses on higher returns on investment as a determinant of making an investment decision and specifically arbitrage opportunities derived from capital as cited by Assunção and Forte (2011). The efficiency that can be derived from decisions around the use of capital as a result of difference in interest rates (price of capital) is the core focus. The theory does not attempt to explore issues of the reason for FDI (or specifically address or define FDI) and treats capital movement in its broadest form (there is no differentiation between portfolio flows and *direct investment*). Furthermore, because the theory assumes perfect markets, transaction costs such as those that can arise as a result of an inefficient regulatory environment, distance (transport costs), weak institutions, corruption and other external factors are not considered (Nayak & Choudhury, 2014). The theory therefore fails to address differences in regions (locations) as a factor in the movement of capital and as a consequence does not satisfactorily address the reasons *why* capital would prefer one location over another and which aspects are important in that regard as even in the case of capital described by the theory. Intuitively, capital can still move from a less endowed nation to a more endowed.

Lastly, the MacDougall-Kemp theory and the trade theory that precede it, do not consider the role of the MNE (Multinational Enterprise) in the movement of capital and therefore fails to extend the comparative advantage theory it advances beyond commodities or factors of production. Because the decision to invest (and therefore move capital) lies with the MNE, the firm specific (or internal) as well as external conditions that affect that decision are not explored beyond differences in interest rates (capital arbitrage).

2.6.2 Theories of FDI based on imperfect markets

2.6.2.1 Monopolistic advantage theories

The first modern theory of FDI, according to Ardiyanto (2007), is the Monopolistic advantage theory, which can be attributed to Stephen Hymer and focused on firm specific advantages as the determinants of FDI. Hymer as cited by Ardiyanto argued that firms that invest abroad, do so because they have an internal propriety monopolistic advantage over the

local competitors such as superior technology, economies of scale or other superior knowledge (Ardianto, 2007). Firm specific advantages can occur at a local level, where the local firm has advantages that are derived from knowing the local territory better and can leverage knowledge of local market conditions, the legal and institutional framework and territory culture, all of which would imply higher costs for a foreign firm to acquire (Ardianto, 2007)Therefore, FDI seeks to take advantage of market imperfections by monopolising the advantages of firms seeking to invest abroad in an environment of competing local advantages (Ardianto, 2007).

The ownership benefits, or specific firm advantages that Hymer promulgated, extended to benefits assumed as a consequence of control of firms. Hymer in this regard defined the difference between direct investments and portfolio investments in terms of control in which he described control or degree of influence as ownership of twenty five percent equity. He describes the reasons that a firm would want control in a foreign enterprise as follows:

1. In order to appropriate fully the returns to certain abilities they possess. They chose this method (FDI) other than the alternative method of licencing because imperfections in the market prevent the fullest realisation of profits unless the firm exercises some degree of control.
2. Firms control enterprises in foreign countries in order to eliminate competition between them when the enterprise sell in the same market or sell to each other under conditions of an imperfect market.

Hymer concedes that international operations can also occur in the manner above as a result of factors other than those related to control. That for instance, competition can be eradicated by collusive behaviour (1976).

Kindleberger like Hymer argues in line with the imperfect market theory (Ardiyanto, 2007). He postulates that FDI occurs as a result of imperfect markets, and if markets had been perfect, "local firms would have an advantage over foreign firms" (Kindleberger, 1969), and FDI would not occur. He described the conditions for FDI to occur as follows:

1. When market participants find a way to collude or are able to differentiate their product or knowledge, resulting in market imperfections.

2. Ability to leverage intellectual property and bespoke technology or obtain a preferential position in the market, resulting in imperfections.

3. Cost competitive advantages obtained as a result of economies of scale that cause firms to expand through global operations.

4. Economic policy and regulatory decisions governments may take that can create monopolies and distortions in the market.

The more significant these "market imperfections are, the greater the likelihood" that a monopoly advantage will exist that will result in an FDI decision (Ardiyanto, 2007).

Product differentiation

Caves extended Hymer's monopolistic advantage theory regarding ownership benefits by suggesting that the ability for firms to differentiate their products may be a key ownership advantage that results in foreign participation. He finds that there is a connection between a firm's unique assets and the level of foreign investment and that firms that invest overseas are typically those that invest heavily in marketing and research and development (Caves, 1996).

The monopolistic theory spearheaded by Hymer is important to the research in several ways:

1. The introduction of the concept of *control* as a central feature in the definition of FDI.
2. A focus on product differentiation.
3. The introduction of imperfect markets (and departure from perfect markets).
4. Focus on the appropriation of ownership benefits in an environment of competing local advantages.

Firstly, prior to Hymer, FDI and portfolio flows had never been studied separately and the theory regarding capital flows relied exclusively on portfolio flows (Dunning & Rugman, 1985). The consequence therefore is that Hymer provides the basis for FDI analysis through his definition of *direct investment* (through the definition of foreign control) which is still used today and will form the understanding in this thesis. By attempting to describe *why* the MNE would want control: a modality of investment that is distinct from portfolio flows, the first attempts to explain the determinants for FDI are made that are relevant to this thesis. If

one is to consider firstly, that control in the context of Hymer implies a degree of ownership and ability to influence or direct the factors of production, and secondly that the ownership and protection of this property is enforced through the institutions of a country, the relationship between properly functioning institutions (e.g. that enable property rights and protection) and FDI as well as the relevance of an analysis of FDI from an institutional view can be induced. It perhaps can be deducted that the institutional quality, as well as institutional type, of a country may have a bearing regarding *where* MNE's choose to control foreign productive activities (invest in foreign production), as Hymer pointed out.

> "Different nations have different governments, different laws, different languages and different economies……..National firms have a general advantage of better information about their country: its economy, its language its law, its politics. To a foreigner, the cost of acquiring this information is considerable…" (p.27).

The *choice of location* when considering an FDI decision envisages the extent to which the local advantages of foreign firms can be minimised as this would contribute to maximising the appropriation of ownership benefits that are described by Hymer as one of the reasons for acquiring control in foreign production.

2.6.2.2 Internalisation Theory

Buckley and Casson (1976) explain how technology transfer and international trade can be explained by the concept of internalisation of imperfect product markets. Two types of internalisation where identified by Buckley and Casson:

1. **Operational internalisation** - Involving intermediate products flowing through successive stages of production and the distribution channel.
2. **Knowledge internalisation** – The internalisation of the flow of knowledge emanating from R&D.

x.

Focus on the theory has been mainly on Knowledge Internalisation as admitted by Buckley and Casson (1976). A standard example of Knowledge Internalisation made by Buckley and Casson and also cited by Blonigen, is that related to asymmetric information. A licensee in this case may not offer the required value in negotiations as a result of the licensor not

providing sensitive information required to make an appropriate offer. The licensor will not offer the information before a contract is signed as this would be tantamount to sharing information that can be exploited. This results in a situation where the most optimum decision is to internalise the transaction by "establishing its own production affiliate in that market" (Blonigen, 2005).

The theory of internalisation therefore focuses on the efficiency and the reduction of transaction costs as a driver for FDI. This element is pertinent to this study as it recognises that institutional weaknesses such as those that have the effects of raising tariff prices as a response to an inadequate business environment and consequently, the ability of countries to raise sufficient tax revenue, can result in the bypassing of tariffs through the internalisation of operations in a foreign country (Blonigen, 2005). Internalisation to improve efficiency as a response to institutional weakness is therefore possible (Blonigen, 2005).

2.6.3 Eclectic paradigm (OLI advantages theory)

The development of the literature explaining FDI in terms of imperfections in the market was led primarily by Dunning (1992; 2000) with his OLI paradigm, also called the Eclectic Paradigm, and supported by Cleeve (2008). In his theory, which is regarded as the most "robust and comprehensive" theory on FDI, he suggests that:

> "…a firm would engage in FDI if three conditions were fulfilled:
>
> (i) It should have ownership advantages vis-à-vis other firms (O);
>
> (ii) It is beneficial to internalize these advantages rather than to use the market to transfer them to foreign firms (I);
>
> (iii) There are some location advantages in using a firm's ownership advantages in a foreign locale (L)" (p.275).

The OLI paradigm asserts that the degree, location and makeup of the activities of business of a firm that operates or intends to operate internationally, is driven by the interaction of three key variables which according to the proponent author, also comprise the components of three sub-paradigms: Ownership, Location and Internalisation (OLI). The Ownership (O) and Internalisation (I) in Dunning's OLI paradigm are derived from the idea of taking advantage of a firm's inherent and acquired internal attributes and capabilities while reducing transaction costs (Blonigen, 2005). Dunning views the Ownership (O) advantages as those monopolistic advantages that are firm specific such as patents, trademarks (and other

intellectual property), market and trade advantages that are leveraged as competitive advantage over local firms (Ardiyanto, 2007).

The "L" is described by Dunning as "the locational attractions of alternative countries or regions, for undertaking the value adding activities of MNEs" (Dunning, 2000). The advantages that can be exploited through the resource specificity and capabilities abroad can be used to counter the disadvantages of operating abroad such as economic costs that arise as a result of geographical distance and unfamiliarity of the foreign firm (Eden & Miller, 2004; Godinez & Liu, 2015). When deciding on the attractiveness of a foreign destination, MNE's should therefore take into consideration the host country's institutional characteristics that include the quality of the institutions and the prevalence of corruption (Chen, Yao, & Kotha, 2009; Godinez & Liu, 2015) as Svensson points out, the prevalence of corruption often occurs as a result of the inefficiency of institutions (2005).

The UNCTAD identifies four economic determinants of FDI: 1) Market attractiveness, 2) Availability of low-cost labour and skills, 3) Presence of natural resources, and 4) Enabling infrastructure (United Nations, 2012). The literature on the determinants of FDI similarly examines a large number of variables related to the above economic determinants. Moosa conducts a study regarding the explanatory variables of foreign direct investment in theoretical discussion (2002), Dunning makes examples in literature of the four main types of economic determinants of FDI, similar to those promulgated by the United Nations: 1) Market Seeking, 2) Resource Seeking, 3) Efficiency Seeking and 4) Strategic Asset Seeking (2000). Recent studies of the determinants of FDI include Blongien (2005) and Moosa and Cardak (2006).

These studies have looked at different combinations of the determinant variables with varying and mixed results regarding the level of importance of the variables as well as the direction of the effect as noted by Moosa and Cardak (2006).

The OLI paradigm is an important addition to the theory of FDI and this thesis as it firstly acknowledges the ownership and internalisation features of FDI already described, but most importantly, specifically recognises the location choices or the *where* of FDI. Transactional costs related to distance of the host country, for example, can deter an MNE from engaging in FDI but can also act as competitive advantage for those countries more familiar with the

regional environment. Institutional weaknesses therefore that emanate from corruption could be seen as regional competitive advantages and may not deter MNE's form countries with similar environments.

2.7 Institutions, FDI and Corruption Distance

2.7.1 Corruption and Institutions

Kaufmann et al (2003) describe the presence of corruption as result of the lack of respect displayed by the corrupter and the corrupted to the rules that govern their interactions thus indicating "a failure in governance". The authors further explain governance as "the traditions and institutions by which authority in a country is exercised", which are identified as:

1. The activities and institutions that inform how governments obtain and relinquish power, as well as how they are held accountable;
2. The capability and ability for government and its agents to develop and execute effective policy, and
3. The adherence by society and the government to the preservation of the institutions that govern them through the observance of the laws that gives rise to their existence and function.

The first description of governance mirrors aspects of the definition of corruption provided by Jain (2001) which stated and highlights the manner in which corruption and institutions are related:

> "Corruption seems to result from an imbalance between the processes of acquisition of positions of political power in a society, the rights associated with those positions of power, and the rights of citizens to control the use of that power" (p. 3).

Granted that governance is explained by "the traditions and institutions by which authority in a country is exercised", the questions that perhaps follow are:

1. What are institutions?
2. What is meant by political power (authority)?

3. How is authority obtained and exercised?
4. For whose benefit is this authority exercised?

In regards to the first question, what are institutions? North describes institutions in an informal and formal manner. Informally, he terms institutions as "the rules of the game in a society". Formally, he describes institutions as "humanly devised constraints that shape human interaction (North, 1990). They structure incentives in exchange whether political, economic or social". The description also seems to satisfy the question regarding for whose benefit, in its reference to "society" and "human interaction". The classification of these incentives by North also seems to further articulate the type of benefits (social, economic and political).

As society is bound to have conflicts of interest among various groups, and how the different preferences are managed often depends on the political power or strength. Paul Alagidede explains that consumers and producers in a country make the most decisions that affect the nature of the economy. He further states that although the economy is primarily moulded by producers and consumers, government activities play a significant and powerful effect on the way producers and consumers interact (Alagidede, 2012). These interactions according to Jain (2001) are economic transactions. The factors that play a major role in economic outcomes according to Acemoglu et al (2005) are the economic institutions in a society.

As such, because political power determines economic institutions that lead to different choices about the distribution of resources and economic performance the fundamental explanation, according to North and Thomas, of comparative growth in economies, is differences in institutions (1973).

Acemoglu et al (2005), summarise these ideas schematically as follows:

$$Economic\ institutions \rightarrow\rightarrow \begin{matrix} economic\ performance \\ distribution\ of\ resources \end{matrix}$$

According to Acemoglu et al, economic institutions are determined as interests of society as a result of their economic outcomes or benefits. Because different economic institutions determine varying economic performance as well as different distribution of resources, there

will be a conflict of interest in society regarding the choice of institutions which is decided by the political power of the competing groups. The following is described by the second part of the Acemoglu et al (2005) framework:

$$Political\ power \rightarrow\rightarrow economic\ institutions$$

According to Benassy-Quere et al and cited by Assunção et al (2011), since the late 1990's, much research attentiveness engaged institutional quality as the main determinant of developmental differences between countries, were "low levels of corruption where associated with greater prosperity" (p.6). The studies used several different proxies for institutional quality:

Those that used a corruption index found corruption to be statistically and significantly negative in attracting FDI (Asiedu, 2006; Cleeve, 2008; Mohamed & Sidiropoulos, 2010). Asiedu (2006) for example use a corruption index obtained from the ICRG (International Country Risk Guide) which includes varying dimensions of corruption such as demands for bribes, secret party funding, excessive patronage and nepotism. The author combines this index with the rule of law index also obtained from the ICRG as the key institutional variables in her analysis into the importance of institutions in directing FDI to a region (Sub-Saharan Africa). Similarly, Mohamed and Sidiropoulos use the ICRG corruption index but unlike Asiedu, combines it with the "Investment Profile, which includes assessment in contract viability/expropriation, profits repatriation, and payment delays, to measure institutional quality" (2010, p.90). Cleeve in contrast uses the CPI (Corruption Perception Index) obtained from Transparency International (Cleeve, 2008).

If one is to firstly consider the argument initially made, that because FDI implies control, and that the ability to exercise control in order to fully appropriate the ownership benefits of MNE's, requires the protection of property rights and consequently the rule of law. Secondly if this was to be combined with the understanding provided by North that comparative growth in economies can be explained by differences in institutions and Kaufmann et al (2003) assessment that corruption is the undermining of institutions, the measurements employed by Asiedu (2006), Cleeve (2008) and Mohammed et al (2010) provide an adequate proxy for institutional quality sufficient for the purposes of this thesis which examines whether differences in institutional quality (corruption) affects FDI in Sub-Saharan Africa.

2.7.2 Distance

The theory of FDI centered primarily on market inefficiencies and how foreign direct investment is a consequence of the exploitation of these market inefficiencies. In this view, FDI is a consequence of this exploitation. Using Acemoglu's framework, FDI is explained through factors related to economic performance and the distribution of resources. Cross-national distance as a factor affecting the internationalization of a firm was touched upon by early scholars such as Hymer who noted that the "liability of foreignness" increase with distance between the home and host countries (1976). Berry et al (2010) cite Dunnings view that countries "may be distant from each other not only in a geographical sense, but also because economic, social cultural, or political differences make it harder for firms to operate across them" (p.1). Complementary to this view, is the institutional view of FDI, which views differences in the development of countries as a result of differences in institutions as promulgated by North (1991).

The issue of distance therefore is important in the analysis of Sub-Saharan Africa FDI in that firstly it emphasizes the role of the nature of institutions (including institutional quality) in the assessment of FDI as well as recognizes the importance of the competitive advantage of geographical locality as emphasized by Dunning (2000). Secondly, if one is to accept the contribution by Dunning in his OLI paradigm: the degree of FDI is as a result of the interaction of ownership (O), location (L) and internalization (I), and more specifically that the ownership advantages are more efficiently appropriated through internalization, the remaining and consequential inquiry would be *where* these advantages can be best exploited given the "liability of foreignness". The relevance to the research therefore is that, given the assumption that the ownership (O) and internalization (I) factors have been considered by the MNE, and the consideration propounds an FDI decision, do differences in the ability of MNE's to exploit locational advantages have a significant effect on the choice of location (L) ?. To be more specific, do SSA countries leverage the assumed (as a consequence of their proximity to each other) local (or regional) advantages in a manner that can explain regional FDI flows in SSA?

2.7.3 Corruption distance

If one is to consider the position of Kaufmann (2003), that the lack or failure of institutions results in corruption, and that because of conflicts of interests in society, institutions would

differ in different social settings, the result would deductively imply differences in corruption as a result of differences in institutions.

There have been challenges facing the models in empirical literature explaining FDI and the numerous variables that affect it, and the lack of consensus regarding the effects of corruption on FDI has led some to search for alternative explanations such as "psychic distance" (Johanson & Vahlne, 1977). In this view, the selection of a similar market reduces uncertainty, promoting FDI (Qian & Sandoval-Hernandez, 2016).

Other strands in the empirical literature predicted trade flows between countries under gravity model of trade, which according to Blongien (2005) "specifies the trade flows between countries as primarily a function of the GDP of each country and the distance between the two countries" (p.393). The theoretical grounding of these models was contributed by academics such as Anderson et al (2003) and through the gravity models which explain trade flows, the specification according to Blonigien similarly fit FDI flows reasonably well and is extended to FDI as a result (2005).

This argument of "distance" to explain factors affecting FDI allocation decisions was extended with the postulation of the idea of the corruption distance between two countries by Habib and Zurawicki (2002).

Uhlenbruck et al later point out that corruption has different dimensions in different countries and the perception to which it is observed differs with differing locations both in terms of scope and the level of uncertainty it generates (2006). As already observed (see fig 1.1), the prevalence of corruption varies greatly with locality from a regional perspective, but also in addition to this, FDI activity occurs between different regions as well as within the same or similar regions. In view of this, the effects of corruption as identified by the World Bank, IMF and various academic literature can be conditional on the identity of the source country and the country and/or region investment is intended for (Cuervo-Cazurra, 2006). Finally, in addition to the above, Godinez (2015) cites Driffield's suggestion that countries with limited exposure to corruption have a greater expectation to be adverse to investing in corruption prone investment destinations (2013). Such differences in corruption levels between host and home countries have been seen to influence FDI (Habib & Zurawicki, 2002).

This implies that MNE's that have institutional proximity should be able to overlook certain institutional inadequacies in foreign countries especially if corruption in these countries (which implies institutional inadequacy) is more prevalent in the country of origin. The converse is that MNE's that originate from less corrupt countries would not have this competitive advantage even if there exists an assumed institutional proximity. This is important to this thesis as it suggests that although institutional proximity may exist, the ability of an MNE to leverage the proximity may be related to the degree in which the home country MNE views this proximity as a competitive advantage or an added transactional burden.

2.7.4 Corruption growth and FDI

In 2016, the president of the World Bank Jim Yong Kim states the following regarding corruption:

> "All over the world, citizens are rising in protest against governments that are perceived as corrupt. Corruption poses an enormous obstacle to economic and social development and the global goal of ending extreme poverty by 2030…….Corruption is, quite simply, stealing from the poor. It undermines growth and prosperity…." (p.1).

Furthermore, corruption has been cited by the IMF (2016) as having "significant negative effects on the key channels that affect growth" (p.5).

Theoretically, there is no conclusive agreement regarding the effects of corruption on growth (Wei, 2000). The empirical literature can be categorized into three groups: the micro, semi-micro and Macro studies (Asiedu & Freeman, 2009). The categories are formed on the basis of the origin of the source data used to describe corruption and investment. The authors explain micro studies as those that utilize firm level data for corruption as well as investment from sources within the country represented by Batra et al (2003) who include developing and developed countries and Gavaria (2002) whose study is restricted to Latin America. Batra finds that there is a negative correlation between corruption and investment while Gavaria finds no significant relationship.

The unique nature of corruption in different regions and how it varies across regions has been discussed within the literature (Uhlenbruck et al., 2006). Habib and Zurawicki further explain that these "relative differences between corruption levels in home and host countries" (2002, p.298) may influence FDI. We therefore further contribute to the gaps in the African literature as Godinez and Liu had done for the Latin American countries (2015) and follow their example in extending corruption by including the "distance metaphor", propagated by (Shenkar, 2001); psychic distance (Johanson & Vahlne, 1977) cultural distance (Shenkar, 2001); and more recently, institutional distance (Schwens, Eiche, & Kabst, 2011); (Eden & Miller, 2004).

Semi-micro studies are described as those that use firm level data for investment and country wide data for corruption such as Wei (2002) who use cross-sectional data and Asiedu and Freeman (2009), who focus on Latin America, Sub-Saharan Africa and transitional economies. Asiedu and Freeman find that the effect of corruption on investment, varies according to regions. In Transition Economies, there is a significant relationship whereas there is no significant relationship in Latin America and Sub-Saharan Africa.

Macro studies are described as those that use country level data for both corruption and investment such as those of Mauro (1995) and Wei (2000). The overwhelming findings for these types of studies support the idea that corruption is detrimental to growth or investment.

The different studies each have their weaknesses and advantages. Micro studies rely on data at a firm level from the same source, resulting in endogenous problems within the study. Secondly because the data on corruption is derived internally (from within the country), it does not explain the decisions taken into consideration before a firm decides to invest abroad. The Semi-Micro studies utilise country level corruption indices and firm level data on investment. These studies have problems associated with their use of country level corruption and the inherent assumptions that all firms experience the same level of corruption.

Although the majority of studies in this area have been in regards to Macro studies, where country level data is obtained for both investment and corruption, this research has not come across studies that examine economic regions within the African context. Literature that included Africa tended to speak broadly about the developing countries as a category or Sub-Saharan Africa as a Region (Loungani & Razin, 2001), (Asiedu & Freeman, 2009), (Gyimah-

Brempong, 2002). Secondly, as in these studies, little attention has been given to the role of corruption distance as an additional factor in the analysis of corruption and investment although some exist specific to Latin America (Godinez & Liu, 2015). This study aims to contribute to the gaps in the literature regarding African countries, specifically in the area of Macro studies while taking consideration of corruption distance which was not found in these studies. In so doing, a greater understanding of corruption and as a consequence institutional maturity, will provide further insight into the external determinants of FDI and the "L" in the OLI paradigm.

CHAPTER 3: RESEARCH METHODOLOGY

3 Methodology

3.1 Research design

The design of the research seeked to explain relationships between the key independent variables and the dependent variables. According to Saunders and Lewis (2012), an explanatory research is one that seeks to provide new insights or explanations regarding a phenomenon "through the discovery of causal relationships between key variables" (2012, p. 140). This approach was guided by a *positivist* philosophical disposition which the said authors describe as one in which emphasis was placed on the observable and measurable data or variables which "the positivist researcher pursues a cycle of attempts at establishing cause and effect until future events may be accurately predicted" (p. 105).

It is important at this stage to distinguish between causality and correlation as the positivist approach attempts to establish cause and effect. While correlation refers to an observed relationship in the behaviour of independent and dependent variables, causality takes the observed relationship further by inferring an explanation to what causes the change in the dependent variable. Weiers (2011) states three conditions that must be satisfied in order to establish causality:

1. There must be a statistically significant correlation between the independent and dependent variables.
2. The occurrence of an independent variable must act upon of the dependent variable first.
3. Extraneous variables that may explain the correlation between the independent and dependent variable must be identified and excluded.

The study approached time horizon by using a longitudinal study where according to Saunders and Lewis is one which studies "a particular topic over an extended time period".

3.2 Unit of analysis

The unit of analysis which are the objects to which this study is based was countries in Africa.

3.3 Research population and sample

The research population, which are the countries under observation and measurement, was first constructed by considering the available country data sets provided by the World Bank and secondly other data sets that may provide useful data not measured by the World Bank for the periods 2003 to 2013.

3.4 Data collection

The study uses secondary data and desktop review obtained from various institutional websites. Detailed methodologies and approaches that provide further explanations of the rational of methods used can all be obtained from these sources. The research limits itself purely with the rational for the use of the various measures. In the context of this research, it was useful to employ secondary data usage for its convenience (time), cost advantages and the leveraging of external expertise and resources. In this line, it would also be logically expected that the nature of the data (country information) would most likely be better obtained through the institutions involved.

The table below summarises the data used in the research and the sources were this data was obtained:

Table 1 : Summary of data collected

Measure used (variable)	**Source**	**Link**	**Data period**
Corruption Perception Index (CPI)	Transparency international	http://www.transparency.org/cpi2015	2003-2013
Human development index	United Nations Development Programme (UNDP)	http://hdr.undp.org/en/data	2003-2013
GDP	World Bank	http://data.worldbank.org/indicator/NY.GDP.MKTP.CD	2003-2013
Educational attainment index	United Nations Development Programme (UNDP)	http://hdr.undp.org/en/content/education-index	2003-2013
Unemployment rate	World Bank	http://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?end=2014&start=2000	2003-2013
Infrastructure index	World Bank	http://data.worldbank.org/topic/infrastructure	2003-2013
Economic Freedom Index	Heritage Foundation	http://www.heritage.org/index/download	2003-2013
Inflation	World Bank	http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG	2003-2013
Political Stability	World Bank	http://databank.worldbank.org/data/reports.aspx?source=worldwide-governance-indicators	2003-2013
Rule of law index	World Bank	http://databank.worldbank.org/data/reports.aspx?source=worldwide-governance-indicators	2003-2013
Bureaucracy	World Bank	http://data.worldbank.org/indicator/IC.REG.DURS?end=2015&start=2003&view=chart	2003-2013
FDI	World Business Environment Survey (World Bank)	http://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD	2003-2013

3.5 Data analysis

As has already been stated, the study uses longitudinal (or panel) data. According to Michael D. Intriligator, panel data are a type of "pooled cross-sectional time-series data in which the same cross section is sampled over time" (Intriligator, 1978). For the purpose of this research, the time will cover the period 2003-2013. The panel data was constructed using 44 countries on the African continent over the period stated. The rational for using panel data over cross-sectional or time-series data are informed by some of the advantages cited by Cheng Hsiao (2014):

1. More accurate inference of model parameters.
2. Avoids selection bias.
3. Controls for the effects of omitted variables.
4. The accuracy advantage that pooled data leverages over individual outcome predictions.

The limitation to obtain data regarding the educational index beyond 2013 was the major factor in the selection of the sample years used to be limited to 2013. A further reason was the unavailability of internet usage data, especially in Africa, prior to the year 2000 and the unavailability of the data used for the bureaucracy index prior to 2003. A sample of data from 2003 to 2013 was used as a consequence.

3.6 Variables of analysis

3.6.1 Corruption measures

Recently, there have been a variety of different corruption measures that have been used in the study of corruption. Some have come from the efforts of Risk management Firms, some such as those provided by the Political and Economic Risk Consultancy and the Institute for Management Development are provided on a propriety basis while some can even be sourced from advocacy groups such as the World Economic Forum (Johnston, 2001).

The measures of corruption used in the current literature can be divided into three different types as described by Asiedu and Freeman (2009). The authors label these measures in terms of three classifications which they call the internal, external and hybrid. The *internal*

measurements refer to those measurements where perception of corruption is obtained from firms that operate within a country. The *external* measurements are those that are obtained from risk analysts that reside outside the country while the hybrid measurements combine data from different sources and the most widely used as described earlier, is the Corruption Perception Index (CPI).

For the purpose of this research, corruption was measured using the Corruption Perception Index (CPI). This in recognition that corruption is in itself difficult to measure as it often occurs in secret and that it is the perception of corruption that informs investment decisions. The CPI ranks the level of corruption in countries from around the world on a scale of 0-10 (prior to 2012) with 10 being a corrupt clean country environment. We then used the CPI index to articulate the corruption distance that is found between the investing and host country. Post 2011 (2012 and 2013), the CPI is measured on a scale of 0-100. Values for these two years have been adjusted for comparability (the mean value was used).

3.6.2 Control variables

The control variables in the study comprise of the other determinants of FDI which are suggested in the literature. The study classifies the control variables using the UNCTAD's classification of FDI determinants as well as country risk variables are described in the table below:

Table 2: Control variables

Classification	Examples	Variable used	
Market-seeking investments (demand orientated)	• Market size • Market growth, • Market structure	• Human development index • GDP	• $Human_{it}$. • $lnGDP_{it}$
Resource-seeking investments (Supply orientated)	• Raw materials, labour costs, technology	• Educational attainment index • Unemployment rate • Commercial energy use per capita • R&D expenditure as a percentage of gross national income	• $Education_{it}$ • $Unemployment_i$
Efficiency-seeking	• The availability of	• Infrastructure index	• $Infrastructure_i$

investments,	low-cost labour and skills	• Unemployment rate • Educational attainment index	• $Education_{it}$ • $Unemployment_i$
Country risk	• Inflation • Political Stability • Rule of law index • Bureaucracy	• Inflation • Political Stability • Rule of law index • Bureaucracy	• $Inflation_{it}$ • $PStability_{it}$ • Law_{it} • $Bureaucracy_{it}$

Source:(Godinez & Liu, 2015) and own amendment

3.6.2.1 Market-seeking investment variables

The research uses the UN (2015) human development index (HDI), that considers the country GDP per capita, life expectancy, and level of education as utilized by Godinez and Liu (2015), and the natural algorithm of the total GDP (World Bank 2015) of the host country to represent market attractiveness of the host country as used by Godinez and Liu (2015) and Globerman and Shapiro (2003). These two variables represent the market seeking category of the UNCTAD's classification and be used as the proxy for market attractiveness. GDP especially in Africa is very good determinant of FDI. As found by Olatunji et al (2015) a large share of FDI in Africa has been in African countries that are well endowed in natural resources. This FDI in some cases as have contributed up to 50% of to the GDP of these countries (2015). The GDP index is used widely in the research investigating the determinants of FDI such as Qian and Sandoval-Hernandez (2016), Wei (2005) and Godinez and Liu (2015). In all these cases, GDP was found to have the most effect on FDI. In further support, Hansen et a1 finds that an increase in the mean ratio of FDI by 1% on average results in an increase of 2.25% in GDP (2005).

Reiter et al investigates contested the contested relationship between FDI and development. One the one hand he states, it has been argued that FDI brings human capital, financial capital and other benefits and others have argued that it has the potential of crowding out local competition and not transfer monopolistic advantages to locals. He further suggests that these issues often have to do with the FDI policy of the host country and finds that FDI has reduced year to year improvement of HDI in cases where there where not adequate FDI restrictions and the converse being also true (2010). The above is the rational for including HDI as a variable as this will give the research insight regarding the potential policy environment of the African countries.

3.6.2.2 Country risk variables

Country risk is represented by the Rule of Law Index, following the example of (Godinez, 2015) and Globerman and Shapiro (2003), for representing law enforcements, property rights and crime. The inflation proxy used is the consumer price index obtained from the World Bank and Political Stability is representing measures of perceptions of the likelihood of instability and violence as defined by the World Bank. The monopolistic advantages discussed, promulgated by Dunning and cited by Ardyanto (2007), cannot be taken advantage of in an environment where there is political instability and risk to assets owned. Although Cleeve (2008) and Mhlanga (2010) find inconclusive results regarding the effect of the political stability index, Mhlanga in the same study finds a negative result when using a different country risk rating. For this reason a composite of indicators that reflect country risk was used in the study.

3.6.2.3 Resource Seeking

The Resource Seeking FDI investment is represented by the Unemployment Rate of the host country as a measure of the attractiveness of the country (UN 2015), the Educational Attainment Index measured by the Mean Years of Schooling and Expected Years of Schooling by the United Nations Development Programme (UNDP 2015).

3.6.2.4 Efficiency-Seeking Investments

To represent the Efficiency-Seeking Investments, we use the Bureaucracy level of the World Bank to rank the ease of conducting business in a given country as well as the Infrastructure Index based on the level of internet penetration in the country. The availability of the internet has been shown to increase productivity in a country McGukin et al (1998). Choi (2003) demononstrates in his findings that when internet users in a country increase by a10%, there is a corresponding increase of 1.84% in FDI.

3.7 The Model

The study utilises the fixed effects model described by the following equation:

$$\begin{aligned} LnFDI_{it} = {} & \beta_1 CPI_{it} + \beta_2 CorrDummy_{it} + \beta_3 Corr\_morecorr_{it} + \beta_4 Corr\_lesscorr_{it} \\ & + \beta_5 Human_{it} + \beta_6 Law_{it} + \beta_7 Bureaucracy_{it} + \beta_8 EcFreedom_{it} \\ & + PStability_{it} + \beta_9 Education_{it} + \beta_{10} Inflation_{it} + \beta_{11} Infrastructure_{it} \\ & + \beta_{12} lnGDP_{it} + \beta_{13} Unemployment_{it} + \alpha_i + \varepsilon_{it} \end{aligned}$$

Where:

i = the country

t = time

β = estimated coefficient

α = time invariant effects

Ɛ = error term

The key dependent variable to be explained in the research was the FDI inflows from 2003 to 2013. These flows where obtained from the World Business Environment Survey (WBES), which is a survey of over 10,000 firms in 80 countries.

Following the example of Godinez and Liu (2015), two types of corruption distance will be computed $\beta_3 Corr\_morecorr_{it}$ and $\beta_4 Corr\_lesscorr2_{it}$, which will represent the difference in the perception of corruption between home country and source country when the home country is more corrupt ($\beta_3 Corr\_more_{it}$) and when the home country is less corrupt ($\beta_4 Corr\_less_{it}$). This is to specifically test the different situations regarding corruption distance that may affect FDI between African countries.

3.7.1 Choice of the model

The study uses longitudinal (or panel) data. The choice of the model is a result of conducting tests to ascertain the appropriateness of different types of econometric models. As such, a comparison between the fixed-effects model, the pooled OLS model and the random-effects model was performed. The types of tests and the results indicating that the fixed-effects model is the most appropriate in the case of this research are discussed in the following chapter. It is however prudent at this stage to point out that the fixed-effects model chosen "cannot estimate the effect of any unobservable variable like entrepreneurial or managerial skills, religion, culture or government authorities' ability to manage a country and attract FDI" as mentioned by Lumbila (2005, p.13). The consequence of this is that effects such as those that have resulted as a result of colonial history which may be important in the case of Africa are not estimated in the current study.

3.8 Method of analysis

As has already been stated, the data used in the study is obtained from a variety of sources (see Table 1). The data was then refined to standardize the naming of countries and thereafter consolidated in Excel as a single data set. The necessary calculations were then made regarding variables that required computation (corruption distance) in order to arrive at a complete data set that was imported into a statistical tool. Corruption distance was calculated as the difference between the CPI index of a host country for a given year and the average CPI of home countries for the same year. For each African country, the average of home country that were more corrupt was subtracted from the CPI of the host country to arrive at "CorrD_morecorr". The average of home countries that where less corrupt was subtracted from the CPI of the host country to arrive at "CorrD_lesscorr".

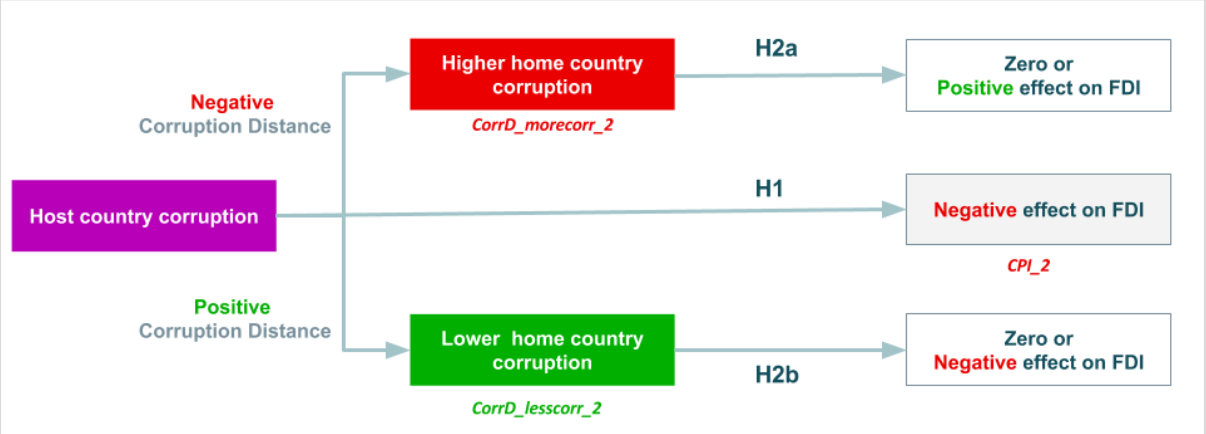
Statistical software: GRETL (GNU Regression, Econometrics and Time Series Library).

The ln of FDI inflows consisted of 27 missing observations. This is as a result of negative FDI inflows (which suggest disinvestment) which were excluded from the study. The research therefore aims at:

1. Confirming the effect of corruption on FDI inflows in Africa (H1).
2. Confirming the effect of corruption distance has an on FDI where the home countries are more corrupt than the host country (H2a).
3. Confirming the effect of corruption distance has on FDI where the home countries are less corrupt than the host country (H2b).

The research takes three approaches to test these objectives through three hypotheses which are H1, H2a and H2b. This is illustrated in the diagram below:

Table 3: Research hypotheses



xii.

These hypotheses will be tested by confirming if a significant statistical relationship exists between the corruption variables of CPI, CorrD_less, and CorrD_more in relation to FDI inflows. Time lag effects were taken into consideration at it was determined that a lag of t_{-2} for the corruption variables produced the more significant p-value for corruption.

3.9 Limitations and Delimitations of the study

The key independent variables under investigation, that describe corruption as well as corruption distance, are measurements of the perception of corruption. Experience shows that there are a variety of the types of corruption that occur as well as the extent to which they occur in different societies and economic development. Michael Johnston points out that these differences according to theory are as a result of differences in culture, economic, political and other factors affecting the historical development of societies, and the difficulty in the measurement of corruption has made making comparisons and building comprehensive theories difficult (Johnston, 2001).

3.9.1 CPI Reliability

The shortcomings of the index are that, as already stated, the measurement is not a direct observation of corruption and corruption may manifest itself in various, incompatible, ways in different countries and or regions. Secondly, as pointed out by Lambsdorff, the changes in the year to year comparisons of a country's perception index have a variety of reasons over and above changing perception such as sample and methodology (1999). This has resulted in

a mean estimation of the perception index for the 2012 and 2013 years which may remove some reliability in the information for this period.

Advantages are that the index is composite of several corruption measures (seventeen surveys), and as such, can be trusted from a reliability point of view. To test this reliability, the correlations of the index from year to year will be tested. A weakness of this method will however be that the coefficients can be too strong and different levels of data may be available from different countries as cited by Johnston (2001).

3.9.2 CPI Validity

The study avoids measuring corruption directly and focus more on the perception of corruption, as business decisions are made in consideration of perceived levels of corruption and actual corruption often occurs in unobservable instances. The Transparency International's Corruption Perception Index is the most widely used measure of corruption and is cited as the most ambitious effort to measure corruption by Johnston (2001). For this reason, together with difficulty in directly observing corruption, this measure for corruption will be used.

3.9.3 Theoretical scope

The research does not investigate the causes of corruption but focuses on the impacts or consequences that corruption may or may not have on FDI and the channels corruption may impact FDI. As such, the scope of the research was confined to an exploration of the determinants of FDI and the extent to which corruption and corruption distance affects these. Where theoretical discussion regarding the causes of corruption is mentioned, this may be that these causes are found to be the same as the consequences of corruption.

Furthermore, the research will confine itself to the external factors influencing FDI as time constraints and data availability may be a constraint when information regarding individual Multinational Enterprises (MNE) motivations are sought (internal firm motivations) as well as the fact that the direction of the research is also to contribute to the macro level studies regarding FDI.

CHAPTER 4: RESEARCH FINDINGS AND ANALYSIS

4 Data Analysis

This chapter, will discuss the findings of the research. The study will begin by showing the summary statistics of the dependent and independent variables that form the basis of this study and proceed to discuss each objective, the hypothesis that underpinned the investigation and conclude with a summary of the results. The research objectives aimed to test the relationship between corruption and FDI inflows between African countries as well as test whether or not corruption distance is a factor that influences African FDI inflows from host countries.

To achieve these results, an initial sample of 46 African countries were included as part of the analysis. Eritrea was removed from the population because of missing inflation and education data and the Seychelles for absence of data for unemployment. As a result, a total sample of 44 countries in Africa was used. The following are the summary statistics of the dependent variable (ln FDI) and the independent variables under focus as well as the control variables:

Table 4: Summary statistics

Variable	Mean	Median	Minimum	Maximum	Std. Dev.	Skewness	Ex. kurtosis
CPI	2.93399	2.7	1.4	7.6	1.12047	1.92492	4.2955
CorrD_lesscorr	0.726174	0.491127	0.073462	4.08522	0.736355	2.50812	6.87556
CorrD_morecorr	-2.39048	-2.429	-2.88209	-1.07222	0.213983	3.00441	13.3311
FDI_of_GDP	4.28668	2.89874	-5.97751	41.8096	5.66252	3.04771	12.7096
GDP	242.5	242.5	1	484	139.863	0	-1.20001
LN_GDP	23.2176	23.0875	20.0039	26.9674	1.38917	0.403962	-0.0984386
Educationindex	0.427172	0.422369	0.136145	0.718097	0.130257	0.137843	-0.679042
HDI	0.490657	0.468	0.1944	0.775	0.117518	0.581373	-0.420136
Inflation	62.6032	6.17	-35.84	24411	1115.12	21.7569	472.519
Infrastructure	7.18109	3.79906	0.150978	56	9.43268	2.46158	6.76493
Political_stability	33.2905	33.9623	0.943396	92.823	22.0238	0.348472	-0.706995
Rule_of_Law	-0.671596	-0.648974	-1.84183	1.05673	0.601185	0.360998	-0.0957011
Unemployment	10.3095	7.35	0.6	38.6	7.87847	1.24406	0.879243
Bureuacracy	42.7054	34	5	177	35.9093	1.76762	2.97355
l_FDI_inflows	19.5586	19.7739	10.3607	23.1724	1.85805	-1.0362	2.63659

Table 5 below illustrates the results of the coefficient of correlation test of the variables. A coefficient of correlation that is close to 1 or -1 from 0 is strong and the one which is closer to

zero is regarded as having a weak relationship. The data suggests that at a significance level of 5%, only the GDP has a strong linear relationship to FDI.

Table 5: Correlation coefficients

Correlation coefficients, using the observations 1:05 - 44:11
(missing values were skipped)
5% critical value (two-tailed) = 0.0895 for n = 480

	LN_GDP	Educationindex	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy	CPI_2	Political_stability_1	CorrD_lesscorr_2	CorrD_morecorr_2	l_FDI_inflows
LN_GDP	1													
Educationindex	0.446	1												
HDI	0.544	0.892	1											
Inflation	-0.029	0.023	-0.027	1										
Infrastructure	0.532	0.494	0.581	0.018	1									
Political_stability	-0.139	0.427	0.423	-0.042	0.063	1								
Rule_of_Law	0.081	0.447	0.48	-0.093	0.308	0.717	1							
Unemployment	0.059	0.39	0.374	-0.034	0.13	0.347	0.291	1						
Bureuacracy	-0.117	0.028	-0.026	0.073	-0.21	0.109	-0.269	0.203	1					
CPI_2	0.143	-0.021	-0.06	0.1	0.059	-0.255	-0.12	0.064	-0.076	1				
Political_stability_1	-0.207	-0.202	-0.229	-0.005	-0.084	-0.014	-0.05	0.02	-0.01	-0.171	1			
CorrD_lesscorr_2	0.138	0.017	-0.006	0.1	0.072	-0.231	-0.109	0.036	-0.076	0.986	-0.207	1		
CorrD_morecorr_2	0.286	0.177	0.269	0.044	0.182	-0.12	0.002	-0.164	-0.138	0.574	-0.272	0.645	1	
l_FDI_inflows	0.747	0.351	0.483	-0.044	0.374	0.04	0.129	0.145	0.009	0.067	-0.233	0.062	0.208	1

Surprisingly, there is a positive correlation between the time it takes to start a business (Bureaucracy) and FDI (0.009) albeit a weak one. Godinez and Liu in this case also found a weak linear relationship and insignificant result relationship that was positive in this case (2015). It was expected that bureaucracy would have a negative correlation with FDI as found by prior research such as Kinoshita and Campos (2003). The strength of the linear correlation for all other variables was found to be in line with findings of Godinez and Liu (2015) except for the Rule of Law, which was strong in their case and very weak in our analysis.

4.1 Objective 1: Does corruption affect FDI inflows in Africa

4.1.1 Hypothesis H1: Corruption (CPI) and FDI inflows

The hypothesis H1 aimed to establish whether corruption has effect on FDI inflows into Africa. A regression model was developed taking consideration of the variables that may affect FDI flows within countries as described in section 3.8 of this thesis. A further testing of the model was performed in the econometrics software GRETL. The first step was to determine if the model stated was the most appropriate model for the said investigation.

Table 6: Fixed effects model (Model 1) Corruption and FDI inflows

Model 1: Fixed-effects, using 344 observations
Included 44 cross-sectional units
Time-series length: minimum 6, maximum 9
Dependent variable: l_FDI_inflows

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	0.230093	1.07651	0.2137	0.8309	
CPI_2	−0.0771002	0.0439572	−1.7540	0.0805	*
LN_GDP	0.856665	0.0492239	17.4034	<0.0001	***
Educationindex	−2.64989	0.856056	−3.0955	0.0022	***
HDI	2.75904	1.18E+00	2.3338	0.0203	**
Inflation	−1.46408e-05	3.91831E-05	−0.3737	0.7089	
Infrastructure	−0.0150336	0.00776246	−1.9367	0.0538	*
Political_stability_1	−0.0110651	0.00258236	−4.2849	<0.0001	***
Rule_of_Law	−0.0357783	0.132624	−0.2698	0.7875	
Unemployment	0.00980164	0.00679771	1.4419	0.1504	
Bureuacracy	0.00055117	0.00173523	0.3176	0.751	

LSDV R-squared	0.702018	Within R-squared	6.36E-01
LSDV F(53, 290)	12.89083	P-value(F)	1.12E-50

Random effects test
Breusch-Pagan test -
Null hypothesis: Variance of the unit-specific error = 0
Asymptotic test statistic: Chi-square(1) = 17.16 with p-value = 3.43594e-05

Hausman test -
Null hypothesis: GLS estimates are consistent
Asymptotic test statistic: Chi-square(10) = 84.191 with p-value = 7.53561e-14

A random effects regression output of the model was considered first which delivered results of the Breusch-Pagan and Hausman test to interrogate the fitness of the model. The Breusch-Pagan test tests the conditional heteroscedasticity in order to establish whether the random effects model is more suited to the data than the pooled OLS model. The null hypothesis for the Breusch-Pagan test is that there is no heteroscedasticity. The possibility of heteroscedasticity in the model was reduced by using the ln FDI in the data used. An indication of high heteroscedasticity in the model would indicate that the random effects model would be preferred above the pooled OLS model as it is considered the best estimator in that case. The GRETL output in table 6 shows a low p-value (3.43594e-05) suggesting that

we should reject the null hypothesis and as a consequence use the random effects model as opposed to the pooled OLS model.

The second step in the analysis is to consider the appropriateness between the fixed effects model and the Random effects alternative. The Hausman test is considered for this decision. In this case, a probability value (p-value) that is small would indicate that the random-effects estimates are not consistent in the data and that there is evidence for fixed effects in the data. Again, the p-value for the Hausman test as determined by the GRETL output is low: p-value (7.53561e-14). The null hypothesis for the Hausman test is that the GLS random effects estimates are consistent. The low p-value indicated that we reject the null hypothesis indicating that in this case, the fixed-effects model is the most appropriate. The results of the fixed-effects model are described in model 1 above. This makes intuitive sense in Africa given the diverse differences in language, culture and colonial history.

As anticipated, the GDP of a country, which is an indicator for market attractiveness has the strongest positive linear correlation to FDI (0.747). This suggests that MNE's may find the potential for market growth, the market size as well as the market structure to be the most important elements in the decision to invest in foreign markets. The findings are consistent with Qian and Sandoval-Hernandez (2016), Mauro (1995). Godinez and Liu (2015) also find a strong correlation at a significance level of 1% but in their case they found a slightly stronger correlation for the human development index.

The Educational Index shows a weak linear correlation (0.351) at a 1% significance level, which was surprising given that Godinez and Liu (2015) found that the coefficient is not significant in Latin America. The reason for these different types of outcomes regarding FDI and human capital are explained by Blomstrom and Adri (2003) by noting that while human capital attracts FDI through its resource seeking motive, it also has the effect of contributing to the human capital in the host country. Hence according to Blomstrom and Adri (2003), just as economies that exhibit high levels of education attainment can attract high levels of technology intensive MNE's low educational attainment may also attract MNE's who contribute simpler technologies.

The results also indicate that assuming a significance level of 10% there is significant evidence to indicate that corruption has a negative relationship with FDI inflows with p-value between 0.05 and 0.1 (0.0805).

Our hypothesis as illustrated in diagram 1, the null hypothesis put forward (H1) was that corruption has a negative effect on FDI in Africa. The alternate hypothesis therefore would be that corruption has a positive or no correlation with FDI inflows.

$$H1_0: \beta_{CPI_{-2}} = 0;\ H1_1: \beta_{CPI_{-2}} < 0$$

The output of our model suggests that this negative effect exists (coefficient −0.0771002) and the p-value of 0.0805 suggests that the correlation is significant at a significant level of 10%. We therefore reject the null hypothesis in this case and accept the alternative hypothesis.

4.2 Objective 2: Does corruption distance affect FDI inflows in Africa where the home country is more corrupt than the host country

4.2.1 Hypothesis H2a: Corruption distance (CorrD_more) and FDI inflows

The hypothesis H2a aimed to establish whether corruption distance has a positive correlation with FDI inflows into Africa where the host country was more corrupt than the home country. Again, a regression model was developed taking consideration of the variables that may affect FDI flows within countries as described in section 3.8 of this thesis.

Table 7: Fixed effects model (Model 2) Corruption Distance and FDI inflows

Model 2: Fixed-effects, using 344 observations
Included 44 cross-sectional units
Time-series length: minimum 6, maximum 9
Dependent variable: l_FDI_inflows

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	−1.22896	1.38965	−0.8844	0.3772	
CorrD_morecorr_2	−0.44549	0.242548	−1.8367	0.0673	*
LN_GDP	0.854421	0.0488417	17.4937	<0.0001	***
Educationindex	−2.94008	0.855711	−3.4358	0.0007	***
HDI	3.57498	1.21808	2.9349	0.0036	***
Inflation	−1.50958e-05	3.91E-05	−0.3859	0.6999	
Infrastructure	−0.0175103	0.00786538	−2.2263	0.0268	**
Political_stability_1	−0.0108264	0.00256061	−4.2280	<0.0001	***
Rule_of_Law	−0.0309011	0.131829	−0.2344	0.8148	
Unemployment	0.00554145	0.00691317	0.8016	0.4235	
Bureuacracy	0.000668945	0.00172126	0.3886	0.6978	

LSDV R-squared	0.70232	Within R-squared	0.636802
LSDV F(53, 290)	12.90944	P-value(F)	9.75E-51

Random effects test
Breusch-Pagan test -
Null hypothesis: Variance of the unit-specific error = 0
Asymptotic test statistic: Chi-square(1) = 17.0054 with p-value = 3.72731e-05

Hausman test -
Null hypothesis: GLS estimates are consistent
Asymptotic test statistic: Chi-square(10) = 83.732 with p-value = 9.27961e-14

A further testing of the model was performed in the econometrics software GRETL. The first step was to determine if the model stated was the most appropriate model for the said investigation. The GRETL model indicates a statistically significant corruption variable. Corruption (CorrD_morecorr) in this case refers to cases where the home countries corruption level was more than the host country. As in Model 1 (and for the same reasons), Model 2 favours a fixed-effects model over the OLS and random-effects model. The null hypothesis for the Breusch-Pagan test is rejected due to the low p-value (3.72731e-05) suggesting the random-effects model is preferred to the pooled OLS model. After considering the results for the low p-value (9.27961e-14) indicated that we reject the null hypothesis as there is evidence of fixed effects. The model output indicated a strong R-squared of 70%.

As illustrated in figure 6, the null hypothesis put forward (H2a) was that corruption distance where the home country was more corrupt than the host country would result in a positive effect on FDI in Africa. The alternate hypothesis therefore would be that the corruption distance as specified has a negative or no correlation with FDI inflows.

$$H2a_0: \beta_{CorrD\_morecorr_{-2}} = 0;\ H2a_1: \beta_{CorrD\_morecorr_{-2}} < 0$$

The output of our model suggests that this negative effect exists (coefficient −0.44549). The significant p-value of 0.0673 a significant correlation. Given that the calculation for the variable $CorrD\_morecorr_{-2}$ is derived from subtracting the CPI of the host country to the more corrupt CPI of the home countries, the variable is a negative and the interpretation of the negative effect should be interpreted as a positive effect on FDI. The research therefore rejects the null hypothesis and observe that in Africa, where the home country was more corrupt than the host country, a positive effect on FDI is observed.

4.3 Objective 3: Does corruption distance negatively affect FDI inflows in Africa where the home country is less corrupt than the host country

4.3.1 Hypothesis H2b: Corruption distance (CorrD_lesscorr) and FDI inflows

The hypothesis H2b aimed to establish whether corruption distance has a negative correlation with FDI inflows into Africa where the host country was less corrupt than the home country. Similarly, a regression model was developed taking consideration of the variables that may affect FDI flows within countries as described in section 3.8 of this thesis. To determine if the model stated was the most appropriate model for the said investigation, the same tests were performed as in the previous models (model 1 and 2).

The results show that a random-effects model is preferred over the pooled OLS model as the most appropriate. The null hypothesis for the Breusch-Pagan test is rejected due to the low p-value (4.67666e-05). A second test to investigate the consistency of the GLS estimates was performed using the Hausman test. The null hypothesis in this regard is that the GLS estimates are consistent. The null hypothesis is rejected due to the low p-value (1.27354e-13) and the fixed effects model is chosen as the most appropriate.

Table 8: Fixed effects model (Model 3) Corruption Distance and FDI inflows

Model 3: Fixed-effects, using 343 observations
Included 44 cross-sectional units
Time-series length: minimum 5, maximum 9
Dependent variable: l_FDI_inflows

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	0.0299788	1.095	0.0274	0.9782	
CorrD_lesscorr_2	−0.117849	0.0663504	−1.7762	0.0768	*
LN_GDP	0.857386	0.0492299	17.416	<0.0001	***
Educationindex	−2.67014	0.855137	−3.1225	0.002	***
HDI	2.86592	1.17766	2.4336	0.0156	**
Inflation	−1.46251e-05	3.92E-05	−0.3732	0.7093	
Infrastructure	−0.0152677	0.0077753	−1.9636	0.0505	*
Political_stability_1	−0.0110749	0.00259437	−4.2688	<0.0001	***
Rule_of_Law	−0.0396465	0.133267	−0.2975	0.7663	
Unemployment	0.00945325	0.00677721	1.3949	0.1641	
Bureuacracy	0.000598983	0.00174287	0.3437	0.7313	

LSDV R-squared	0.70116	Within R-squared	0.635806
LSDV F(53, 289)	12.79384	P-value(F)	2.77E-50

Random effects test
Breusch-Pagan test -
Null hypothesis: Variance of the unit-specific error = 0
Asymptotic test statistic: Chi-square(1) = 16.5749 with p-value = 4.67666e-05

Hausman test -
Null hypothesis: GLS estimates are consistent
Asymptotic test statistic: Chi-square(10) = 83.0335 with p-value = 1.27354e-13

In our hypothesis as illustrated in figure 6, the null hypothesis put forward (H2b) was that corruption distance where the home country was less corrupt than the host country has no effect on FDI in Africa. The alternate hypothesis therefore would be that the corruption distance as specified has a positive correlation with FDI inflows.

$$H2b_0: \beta_{CorrD\_lesscorr_{-2}} = 0;\ H2b_1: \beta_{CorrD\_lesscorr_{-2}} > 0$$

The output of model 3 suggests that the negative effect exists (coefficient −0.117849) with a significant p-value of 0.0768. We therefore accept the null hypothesis and observe that in

Africa, where the home country was less corrupt than the host country, a negative effect on FDI will occur.

4.4 Summary

Table 9: Summary of hypothesis tests

Objective	Null hypothesis	Effect (FD1)	Results
Objective 1: Does corruption *negatively* affect FDI inflows in Africa	**H1**:Corruption *has no relationship to* FDI inflows in Africa	Negative	Rejected
Objective 2: Does corruption distance *positively* affects FDI inflows in Africa where the home country is *more corrupt* than the host country	**H2a**:Corruption has no relationship to FDI inflows in Africa where the home country is *more corrupt* than the host country	Positive	Rejected
Objective 3: Does corruption distance *negatively* affect FDI inflows in Africa where the home country is *less corrupt* than the host country	**H2b**:Corruption distance has no relationship to FDI inflows in Africa where the home country is *less corrupt* than the host country	Negative	Rejected

The summary findings show that all three null hypothesis postulated where rejected. Regarding the Hypothesis HI and H2b, there was sufficient evidence to conclude that corruption has a negative effect on FDI inflows in Africa. The findings however also find a positive effect on FDI where the home country is more corrupt than the host country. A further examination of the results given the literature is discussed in the following chapter.

CHAPTER 5: DISCUSSION OF RESULTS

5 Introduction

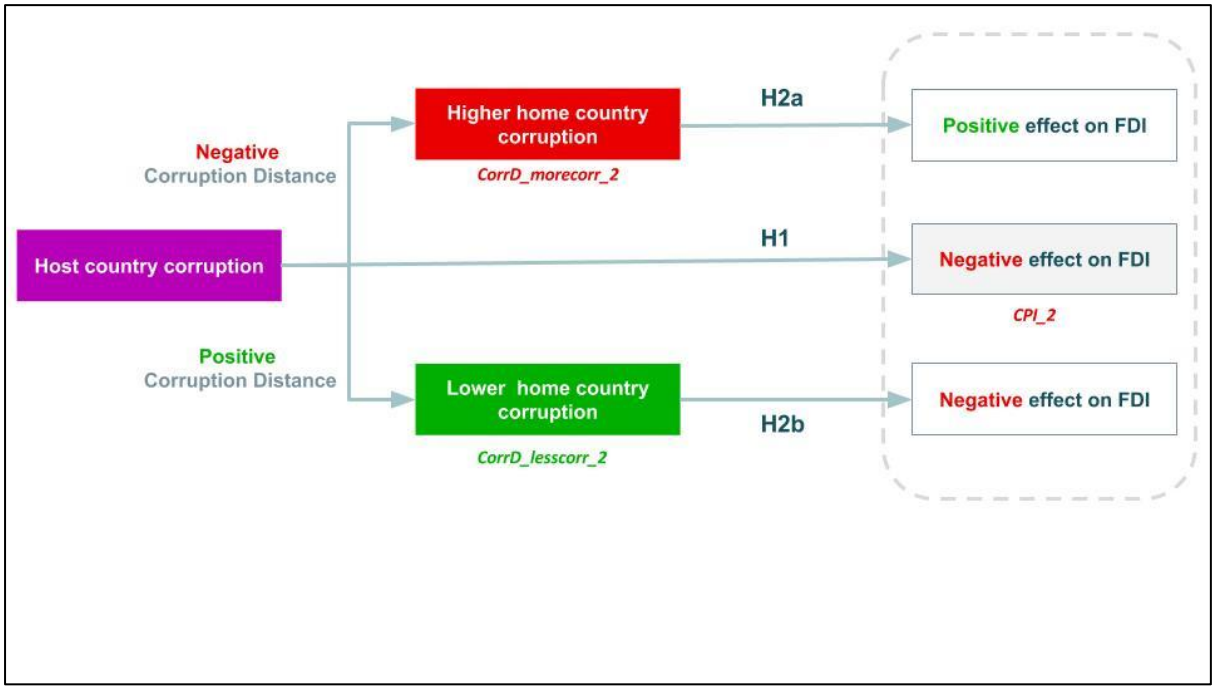
The purpose of the research was to investigate corruption and FDI where the home countries are developing economies in Africa in order to obtain a greater insight regarding relationships in Intra-African investment. In order to achieve this, the following research questions where developed:

- Does the perception of corruption in Africa affect the capability of African countries to attract foreign direct investment from investor countries?
- Is the effect of corruption distance on FDI significant in Africa?

xiii.

This chapter further examines the results of the findings summarized in the previous chapter (Table 8) regarding these questions in greater detail and relates them to the theory discussed as well as offer possible explanations for the results. The results are illustrated below:

Table10: Research results



5.1 Objective 1: Does corruption affect FDI inflows in Africa

Corruption in this instance was represented by the Corruption Perception Index (CPI) for the periods 2003 to 2013. Cleeve similarly uses the CPI obtained from Transparency International (Cleeve, 2008) and finds a negative correlation with FDI in a study with 16 sub-Saharan countries. Other authors support this view using different corruption indexes such as Mohamed and Sidiropoulos who use the ICRG corruption index and Asiedu, who combines it with the Investment Profile (Mohamed & Sidiropoulos, 2010). In other studies, Cleeve (2008) and Mhlanga (2010) find results that are not conclusive. In the case of inconclusive results, it is suggested by Assunção et al (2011), that it may be a consequence of the size of the samples used. The general hypothesis in most studies has been that there is a negative correlation between corruption and FDI inflows.

In the case of this thesis it was essential to firsly include a large population of countries to limit inconclusive results as well as investigate the above discussed general findings in the broader African context where within African countries the perception of corruption is relatively higher than the rest of the world but it is still unclear how African countries behave towards each other when considering investment and the extent to which corruption plays a part in making such decisions.

5.1.1 Hypothesis H1: Corruption (CPI) and FDI inflows

The first hypothesis in the study (hypothesis H1) was aimed at confirming the general view and findings regarding corruption and FDI and relate them to the African context using as large a population as possible given the constraints of available data. These findings suggested that corruption had a negative effect on FDI. The null hypothesis put forward was that corruption has no effect on FDI in Africa and its alternate was that corruption plays a role in affecting FDI in Africa.

A total of 46 African countries was used in the study. The first criteria for selection of the sample was availability of data for the variables under consideration as per the specification of the model in section 3.8. As a consequence, the final data set included 44 African countries with the exclusion of Eritrea and the Seychelles for reason related to the criteria of selection stated. The hypothesis was tested using the fixed-effects regression model after performing

tests to select the most appropriate model for the data set. Time lag effects were taken into consideration at it was determined that a lag of t_{-2} for CPI produced the more significant p-value for corruption. Intuitively, this makes sense as the investment decisions and inevitable investment flow takes time to materialize.

Table 6, presented the results of the regression. A p-value of 0.0805 and a significant coefficient at a significance level of 10% (-0.0771) suggested a negative correlation. As a result, the findings for the relationship between corruption and FDI in Africa are that there is sufficient evidence that corruption negatively affects FDI in Africa and we reject the null hypothesis. Model 1, relating to CPI and FDI, showed an R^2 of 0.702 suggesting the variables included in the model can explain 70.2% of the variation in FDI.

The results for H1 are therefore conclusive as opposed to the findings of Cleeve and Mhlanga. In the case of this research, a sufficient sample of countries was obtained for the study which in a way discounts the possible reasons for inconclusive results suggested by Assunção et al (2011).

5.2 Objective 2: Does corruption distance affect FDI inflows in Africa where the home country is more corrupt than the host country

After getting a greater insight regarding the effect of corruption on FDI in Africa, our second objective addressed the distance factor of corruption that may affect FDI in Africa. The theory of corruption distance as described by Blonigien (2005) "specifies the trade flows between countries as primarily a function of the GDP of each country and the distance between the two countries" (p.393). In the study, research relating to Africa studying the effects of corruption distance specifically looking at Africa has not been encountered. In Latin America, Assunção et al (2011) suggest a positive association between corruption and FDI when the home country is more corrupt than the host country. The expectation from the theory therefore reasons that countries with limited exposure to corruption "are more likely to be deterred by high levels of corruption" in host countries Driffield et al (2013). This view is supported by Habib and Zurawicki who see these differences in corruption levels between host and home countries as having an influence on FDI (Habib & Zurawicki, 2002).

5.2.1 Hypothesis H2a: Corruption distance (CorrD_more) and FDI inflows

The second hypothesis of this research, H2a, seeks to test the view made by Driffield. In this regard, it is expected that home countries that are more corrupt than host countries, are more likely to be unperturbed by the corruption levels and as a result, there would be a positive corruption association with FDI. The study is therefore limited in adequately testing this hypothesis as the primary source of FDI in Africa is mostly from outside of the continent and because it was essential for the study to include the corruption levels of Africa's biggest trading partners when calculating the average corruption level for home countries more corrupt than host countries in Africa, this FDI relationship is skewed to mostly countries outside of Africa.

Table 6, presented the results of the regression. The regression showed a p-value of 0.0673 had with a significance level of $p<0.10$ and a coefficient of -0.44549. Unsurprisingly and confirming the findings of Assunção et al (2011), the coefficient was negative with significant results (negative variable means a positive relationship with FDI in this case), implying that in Africa the level of corruption where the home country is more corrupt than the host country, a positive association of corruption and FDI is observed.

A reason that can be put forward for the results is that, as Johnson had suggested, cultural opinions and other ethical standards vary across regions (Johnston, 2001). These differences cannot be estimated by the fixed effect model used and may suggest the same attitude towards corruption from home countries who appear to be more corrupt as home countries which are less. In fact the evidence that the effect on corruption on FDI is greater in this case. The evidence therefore suggests that the more corrupt home countries with weak institutions "are more likely to invest in conflict locations as suggested by Driffield et al (2013).

These more corrupt countries also represent almost two thirds (64%) of the countries in Africa. This suggests that the institutional quality of the more corrupt countries that facilitate growth and investment such as capital markets and research are weak and as a consequence, the ability to compete in their own markets is diminished. A more plausible explanation is the argument propagated by various researches which links corruption to the increased operational cost of business, creates uncertainty and deters growth (Acemoglu, Johnson, & Robinson, 2005; Acemoglu, Johnson, Robinson, & Thaicharoen, 2003; Andrei Shleifer, 1993; Hall & Jones, 1999; Mauro, 1995) and as such supports and strengthens the *sanding-*

the-wheels hypothesis. Our research results do not provide any evidence supporting the alternative view described by Bardhan (2013) and (Leff, 1964).

At some level the evidence supports the Heckscher-Ohlin Theory of Factor Endowments which relied on the premise that a nation is absolutely better (more efficient) at producing certain products than another as a result of production cost differences as there is clear evidence firstly that capital tends to move from less corrupt countries and secondly that corruption increases the cost of operation in more corrupt countries (Ohlin, 1933). If one considers the significance of the role of technology in modern commerce and the extent of globalisation today, some of the theoretical conjectures of Heckscher such as the assumption of perfectly mobile production factors are more applicable in today's economic environment.

The findings however are surprising in that it was expected that more corrupt countries would find it difficult to exploit factor arbitrage opportunities in less corrupt countries because of a higher costs of production and yet the opposite is suggested by the comparatively higher coefficient (−0.44549) than in objective 3 (−0.117849) of the study. It can be surmised therefore that countries from more corrupt countries that invest in relatively less corrupt countries in Africa find that the local internal propriety monopolistic advantage over the local competitors such as superior technology, economies of scale or other superior knowledge supersedes the local disadvantages they may encounter when investing as found Ardiyanto (2007).

The findings of the research are therefore not surprising from the view point that it may be expected that host countries with lower levels should attract FDI.

5.3 Objective 3: Does corruption distance affect FDI inflows in Africa where the home country is less corrupt than the host country

Objective 3 in the study seeks to answer whether less corrupt home countries are deterred to invest in areas where the home country corruption is greater than the host nation corruption. Intuitively this may appear so. Some of the theoretical discussions in this case would be the same as discussed in objective 1 so they will not be repeated again. The first distinct difference in these two objectives however is that objective 1 considered corruption and FDI from the African context with no consideration of the level of corruption in countries outside

of Africa. Objective 3 on the other hand, compares the home country corruption of countries in Africa as well as outside of Africa in order to determine the effect on FDI if these countries compared were less corrupt than the host country.

Secondly, the objective wants to make a distinction between how the level of African FDI is influenced by countries who are less corrupt from around the world (including those in Africa). Lastly, a distinction is made from objective 2 in relation to excluding the countries who are more corrupt in the computation of the corruption distance. The outcome should give us greater insight regarding how home countries who are less corrupt than African host countries react to the corruption levels of African countries when considering foreign direct investment.

5.3.1 Hypothesis H2b: Corruption distance (CorrD_lesscorr) and FDI inflows

The results for hypothesis Hb2 were not surprising given the overwhelming support of research alluding to the negative effect of corruption on FDI discussed in this study. The null hypothesis was rejected. The results showed a significant p-value of 0.0768 with a negative correlation of -0.117849 (confidence level p<0.10).. The model showed an R^2 of 70%, indicating that the variables explained 70% of the variance in FDI inflows.. The evidence of the study therefore, if one considers the rejection of H2a and H1, points to the view that it is the less corrupt countries that have the most effect on positive FDI flows in Africa.

Our findings support the view of provided by North that comparative growth in economies can be explained by differences in institutions and the Kaufmann et al assessment that corruption is the undermining of institutions. As already stated in the study, we equate institutional quality to corruption and as such we point to the evidence regarding corruption levels and growth provided in Table 8 to support the view that less corrupt countries tend to have greater levels of growth.

Table 8: Mean GDP of countries below (most corrupt) and above (less corrupt)

	Below	Above
Mean	25,420,038,747.67	40,606,240,974.53
Standard Error	7,979,223,891.07	17,880,741,754.41

Median	9,707,694,800.00	10,794,219,098.00
Standard Deviation	42,222,084,142.16	73,724,186,917.83
Range	192,346,000,000.00	288,075,429,430.00
Minimum	763,003,662.70	1,627,882,465.00
Maximum	193,109,209,393.00	289,703,311,895.00
Sum	711,761,084,934.70	690,306,096,567.00
Count	28	17

The acceptance of the evidence also confirms and enhances the acceptability of the more modern theories of FDI based on imperfect markets. As Hymer had argued (cited by Ardiyanto), the internal propriety monopolistic advantage over the local competitors such as superior technology, economies of scale or other superior knowledge determines if firms will invest abroad or not Ardiyanto (2007). This monopolistic advantage must supersede the location advantages that host countries may have which may imply higher costs of operation in the host country. If one combines this view with another also promulgated by Hymer, and already covered in this research, that as FDI implies the control or influence of the factors of production, the flow of FDI is also dependent on the protection of this ownership through the rule of law which is enforced through the institutions of the country. The research finds however that the significance of the rule of law index in our model was weak in relation to Africa, and that political stability was more significant at $p>0.10$ albeit at a lower effect on FDI. Other variables such as the Bureaucracy, Unemployment and Infrastructure also showed a relatively low effect in FDI than the market seeking variables.

The takeaway is that if the environment is ripe for a less corrupt country to invest in a more corrupt home country, the less corrupt country would do so. This may not necessarily mean that corruption does not deter FDI, as our evidence clearly supports that it does, but rather that because other variables such as GDP, education and infrastructure also play a role. The less corrupt countries seem to prefer imperfect markets in which a monopolistic advantage can be exploited. The question that arises as a result of our evidence is therefore whether or not more corrupt countries provide the ideal environment to exploit these monopolistic advantages. The literature and the evidence seems to suggest that these monopolistic advantages exists, but may be constrained by corruption and possibly other variables such as

GDP and HDI (market attractiveness. Other reasons could be "psychic distance" as suggested by Johanson and Vahlene (1977).

Lastly, a surprising finding is that HDI seems to improve in its positive effect (from a coefficient of 2.86592 to 3.57498) on FDI when more corrupt home countries invest in less corrupt African host countries versus when less corrupt countries invest in more corrupt African countries. This finding could point to the motive seeking element of FDI directed to Africa. That either the FDI crowds out the local competitors with limited human capital, technology transfer and other downstream benefits and that may support the need for stronger policy on FDI restrictions as suggested by Reiter et al (2010).

5.4 Recommendations for policy makers

The research provides some insight that may be useful to policy makers in the African continent. The first observation that may be considered is that FDI has been growing substantially in developing countries and Africa for the last three decades. This growth has seen FDI becoming more important that Aid in the said regions. Secondly, intra-African FDI seems to be constrained by the institutional weakness of African countries who are regarded as corrupt as well as foreign countries viewed in this light. These countries contribute the least in FDI flow to Africa and generally have low GDP. FDI flows in Africa are mostly sourced from less corrupt countries and as the evidence suggests, destined to the least corrupt countries in Africa.

With this in view, policy makers in Africa, when outlining African or regional strategies for economic cooperation and integration should also consider the enablers of economic activity such as the enablers that seem to determine and constrain FDI in Africa. Central to this is the institutional quality of countries and the relationship between this and corruption. Secondly because the current drivers of FDI in Africa seems to originate from less corrupt countries, and specifically , countries in Europe and the USA, positive foreign relations in these countries require maintenance. Thirdly, the importance of technological innovation as well as its dependence on the investment in R&D not only will enable market imperfections that drive FDI, but will unlock the potential of FDI within the African countries. Lastly, lawmakers should implement FDI policy restrictions more effectively to ensure that less corrupt countries do not exploit them adversely regarding their development.

It is interesting to note that FDI from African countries tends to be directed toward less corrupt countries outside of Africa. It is these observations that further emphasis on the need to improve their institutions in order to drive economic activity in the continent.

5.5 Recommendations for future research

One of the limitations of this research was the limited information required to perform a reliable investigation of FDI flows between African countries. One of the reasons is that there is not much FDI within African countries, the other is that the information is often unreliable given the lack of reliable data amongst Africa countries. Future research may consider analysis FDI from the point of view of our hypothesis H1, using only African sourced FDI flows. Furthermore, Africa is a large and diverse continent. The fixed-effects in our model are not explained adequately as a consequence of the model choice. Researchers can supplement the findings of this research by investigating how fixed effects such as culture, language and other "psychic" proximities influence FDI location in Africa. Lastly, future researchers may want to explore the reasons why more corrupt countries are less likely invest in less corrupt African countries but are willing to invest in less corrupt non-African countries.

6 CONCLUSION

6.1 Concluding Statement

The research sought to establish the associations regarding corruption and FDI in Africa and also consider the association corruption distance and FDI have in Africa. The research was inspired by the work Godinez and Liu (2015) had done for the Latin American countries (2015) and contribute the same analysis for Africa which intuitively may have greater fixed effects that Latin American countries. In this regard, the study investigated the manner in which the perceived level of corruption in the African continent affects the level of FDI countries in Africa are able to attract. Key to the research was the recognition of the concept of corruption distance as propagated by Habib and Zurawicki (2002): that countries have vary in the way they experience and react to corruption and that the level of corruption of a country may be a determinant in the way firms from such a country make investment decisions.

Another key element of the research was the understanding of corruption through the lens of institutional quality and equating weak institutions with the prevalence of corruption as championed by Kaufmann et al (2003). The importance therefore of the appreciation of corruption distance and institutional quality, coupled with how these interact with FDI flows for the African continent formed the corner stone of the research question and the related theoretical underpinnings considered. Amongst the most important was Hymers Theory of Monopolistic Advantage which emphasized the rational for why firms invest in foreign countries and concludes that it is because they have a monopolistic advantage inherent internally that they then use to their advantage to supersede the local advantages of foreign competitors. The explanatory power of Hymers (1960) position explain the findings of the research sufficiently, and unsurprisingly, also explains the results of hypothesis 2b (H2b) as has already been discussed.

The research findings support the view that corruption distance has a negative effect on FDI in Africa. Given the levels of corruption in Africa, even expectations that more corrupt countries would be less likely to invest in less corrupt countries were not confirmed. Our evidence confirms that the flow of FDI in Africa is mostly influenced by countries who on

average are less corrupt that African countries. Given that our finding also supported that there is a negative relationship between corruption and FDI where the home country is less corrupt than the host African country, we view the potential for FDI towards Africa to be great if the institutional quality underpinning the investment climate in African countries were to improve.

BIBLIOGRAPHY

Acemoglu, D., Johnson, S., & Robinson, J. A. (2005). Institutions as a fundamental cause of long-run growth. *Handbook of Economic Growth*, *1*, 385–472.

Acemoglu, D., Johnson, S., Robinson, J., & Thaicharoen, Y. (2003). Institutional causes, macroeconomic symptoms: volatility, crises and growth. *Journal of Monetary Economics*, *50*(1), 49–123.

Ahmad, E., Ullah, M. A., & Arfeen, M. I. (2012). Does Corruption Affect Economic Growth? *Latin American Journal of Economics*, *49*(2), 277–305. doi:10.7764/LAJE.49.2.277

Alagidede, P. (2012). *Public sector finance* (1st ed.). Africagrowth Institute.

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and economic growth: The role of local financial markets. *Journal of International Economics*, *64*(1), 89–112. doi:10.1016/S0022-1996(03)00081-3

Anderson, J. E., & Van Wincoop, E. (2003). Gravity with gravitas: a solution to the border puzzle. *The american economic review*, 170-192.Ardiyanto, F. (2007). *Foreign direct investment and corruption*. Colorado State University. Libraries.

Asiedu, E. (2006). Foreign direct investment in Africa: The role of natural resources, market size, government policy, institutions and political instability. *The World Economy*, *29*(1), 63–77.

Asiedu, E., & Freeman, J. (2009). The Effect of Corruption on Investment Growth: Evidence from Firms in Latin America, Sub-Saharan Africa, and Transition Countries*. *Review of Development Economics*, *13*(2), 200–214.Assunção, S., Forte, R., & Teixeira, A. A. (2011). Location determinants of FDI: A literature review. *No.433*.Austin, M. (2015). Capital Inflows and Economic Growth A Comperative Study. *Journal of Economics and Finance*, *6*(3).

Bardhan, P. (2013). Corruption and Development : A Review of Issues. *Journal of Economic Literature*, *35*(3), 1320–1346. doi:http://www.aeaweb.org/jel/index.php

Batra, G., Kaufmann, D., & Stone, A. H. W. (2003). *Investment climate around the world: Voices of the firms from the World Business Environment Survey* (Vol. 1). World Bank Publications.

Berry, H., Guillén, M. F., & Zhou, N. (2010). An institutional approach to cross-national distance. *Journal of International Business Studies*, *41*(9), 1460–1480.

Blomstrom, M., & Adri, K. (2003). Human Capital and Inward FDI. Stockholm School of Economics.

Buckley, P. a. (1976). *The Future of the Multinational Enterprises.* London: Macmillan Press Limited.

Blonigen, B. A. (2005). A review of the empirical literature on FDI determinants. *Atlantic Economic Journal*, *33*(4), 383–403. doi:10.1007/s11293-005-2868-9

Buckley, P. J., & Casson, M. (1976). The Future of the Multinational Enterprises, Macmillan Press Limited, London.

Caves, R. E. (1996). *Multinational enterprise and economic analysis*. Cambridge university press.

Chen, X., Yao, X., & Kotha, S. (2009). Enterpreneur passion and preparedness in business plan presentations : a persuasion analysis of venture capitalists' funding dicisions. *Academy of Management Journal*, *52*(1), 199–214.

Chigbu, E., Austin, A., Ubah, C., & Chigbu, U. (2015). Capital Inflows and Economic Growth A Comperative Study. *Journal of Economics and Finance*, 1-14.Choi, C. (2003). Does the Internet stimulate inward foreign direct investment?. Journal of Policy Modeling, 25(4), 319-326.

Cleeve, E. (2008). How effective are fiscal incentives to attract FDI to Sub-Saharan Africa? *The Journal of Developing Areas*, *42*(1), 135–153.

Cuervo-Cazurra, A. (2006). Who cares about corruption? *Journal of International Business Studies*, *37*(6), 807–822.

Dollar, D., & Levin, V. (2005). *Sowing and Reaping: Institutional Quality and Project Outcomes in Developing Countries.* World Bank.

Driffield, N., Jones, C., & Crotty, J. (2013). International business research and risky investments, an analysis of FDI in conflict zones. *International Business Review*, *22*(1), 140–155.

Dunning, J. H. (2000). The eclectic paradigm as an envelope for economic and business theories of MNE activity, *9*, 163–190.

Dunning, J. H. (1992). The global economy, domestic governance, strategies and transnational corporations: interactions and policy implications. *Transactional Corporations*, 7-45.

Dunning, J. H., & Rugman, A. M. (1985). The influence of Hymer's dissertation on the theory of foreign direct investment. *The American Economic Review*, *75*(2), 228–232.

Eden, L., & Miller, S. R. (2004). Distance matters: Liability of foreignness, institutional

distance and ownership strategy. *Advances in International Management*, *16*(187-221).

Faeth, I. (2009). Determinants of foreign direct investment-a tale of nine theoretical models. *Journal of Economic Surveys*, 23(1), 165-196.

Fanon, F. (1961). *Foreword: Framing Fanon*. *The Wretched of the Earth by Frantz Fanon* (1st ed.). New York: Damnes de la terre. doi:10.1016/j.spsy.2013.04.012

Gaviria, A. (2002). Assessing the effects of corruption and crime on firm performance: evidence from Latin America. *Emerging Markets Review*, *3*(3), 245–268.

Globerman, S., & Shapiro, D. (2003). Governance infrastructure and US foreign direct investment. *Journal of International Business Studies, 34*(1), 19–39.

Godinez, J. R., & Liu, L. (2015). Corruption distance and FDI flows into Latin America. *International Business Review*, *24*(1), 33–42.

Gyimah-Brempong, K. (2002). Corruption, economic growth, and income inequality in Africa. *Economics of Governance, 3*(3), 183–209.

Habib, M., & Zurawicki, L. (2002). Corruption and foreign direct investment. *Journal of International Business Studies*, 33(2), 291–307.

Hall, R. E., & Jones, C. I. (1999). Why do some countries produce so much more output per worker than others? *The quarterly journal of economics*, *114*(1), 83-116.

Hansen, H., & Rand, J. (2006). On the causal links between FDI and growth in developing countries. The World Economy, 29(1), 21-41.

Hsiao, C. (2014). *Analysis of panel data.* Cambridge university press.

Hymer, S. H. (1960). The International Operations of National. *Quarterly Journal of Economics*, 190--207.

IMF. (2007). Retrieved from IMF.org: http://www.imf.org/external/pubs/ft/bop/2007/pdf/chap6.pdf

IMF. (2016). *Corruption: Costs and mitigation strategies*.IMF.

International Monetary Fund. (2009). *Balance of Payments and International Investment Position Manual.* Washington: International Monetary Fund,1-351.

International, T. (2016, July). *Transparency International*. Retrieved from Transparency International: http://www.transparency.org/cpi2015

Intriligator, M. D. (1978). *Econometric models, techniques, and applications.* New Jersey: Prentice-Hall Englewood Cliffs.

Jain, A. (2001). *the political economy of corruption.* London: Routledge.

Javorcik, B. S., & Wei, S.-J. (2002). Corruption and cross-border investment: firm level evidence.

Johanson, J., & Vahlne, J.-E. (1977). The internationalization process of the firm-a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, 23–32.

Johnston, M. (2001). Power,politics and corruption. In A. K. Jain (Ed.), *The Political Economy of Corruption* (1st ed., p. 241). New York: Routledge Taylor & Francis Group.

Kaufmann, D., Kraay, A., Mastruzzi, M., & others. (2003). *Government matters III: governance indicators for 1996-2002*.

Kautillya. (1915). *Kautilya's Arthashastra*.

Kindleberger, C. P. (1969). American Business Abroad: Six Lectures on Direct Investment. *World Affairs*, 79-81.

Kinoshita, Y., & Campos, F. (2003, June). Why does FDI go where it goes? New evidence from transitional economies. *The William Davidson Institute*.

Lambsdorff, J. G. (1999). The Transparency International corruption perceptions index 1999: Framework document. *Transparency International, Berlin. Www. Transparency. de [13.12. 00]*.

Leamer, E. E., & others. (1995). The Heckscher-Ohlin model in theory and practice.

Lederman, D., Loayza, V., & Soares, R. (2005). Accountability and Corruption: Political Institutions Matter. *Economics & Politics*, 1-26.

Leff, N. H. (1964). Economic development through bureaucratic corruption. *American Behavioral Scientist*, *8*(3), 8–14.

Loungani, P., & Razin, A. (2001). How beneficial is foreign direct investment for developing countries? *Finance and Development*, *38*(2), 6–9.

Lumbila, K. N. (2005). *What Makes FDI Work?: A Panel Analysis of the Growth Effect of FDI in Africa*. World bank.

Mauro, P. (1995). Corruption and Growth. *The Quarterly Journal of Economics*, *110*(3), 681–712. doi:10.1007/s12117-997-1097-9

Mauro, P. (1997). *The effects of corruption on growth, investment, and government expenditure: a cross-country analysis*. *Corruption and the global economy* (Vol. 77).

McGukin, R. H., & Stiroh, K. J. (1998). Computers, productivity, and growth. The Conference Board,*Economic Research Report* 1213-98-RR.

Mohamed, S. E., & Sidiropoulos, M. G. (2010). Another look at the determinants of foreign direct investment in MENA countries: An empirical investigation. *Journal of Economic Development*, *35*(2), 75.

Moosa, I. A. (2002). Foreign Direct Investment: Theory, Evidence and Practice. Basingstoke.

Hampshire, Houndmills.

Moosa, I. A., & Cardak, B. A. (2006). The determinants of foreign direct investment: An extreme bounds analysis. *Journal of Multinational Financial Management, 16*(2), 199–211.

Mhlanga, N. a. (2010). Understanding foreign direct investment in the southern African development community: an analysis based on project-level data. *Agricultural Economics*, 337-347.

Nayak, D., & Choudhury, N. R. (2014, March). A selective review of foreign direct investment theories. *Asia-Pacific Research and Training Network on Trade*. Bankok: ARTNeT.

North, D., Thomas, P., & others. (1973). The rise of the western world: a new economic history. Cambridge.

North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge university press.

North, D. C. (1991). Institutions, ideology, and economic performance. *Cato J.*, *11*, 477.(2008). *OECD Benchmark Definition of foreign direct Investment.* OECD Publications.

Olatunji, L. A., & Shahid, M. S. (2015). Determinants of FDI in Sub-Saharan African Countries: A Review of the Evidence. *Business and Economic Research*, 5(2), 23-34.

Reiter, S. L., & Steensma, H. K. (2010). Human development and foreign direct investment in developing countries: the influence of FDI policy and corruption. World development, 38(12), 1678-1691.

Ricardo, D. (1817). *The principles of political economy and taxation.* Kitchener: Batoche Books.

Saunders, M., & Lewis, P. (2012). *Doing research in business & management.* Pearson Education Limited.

Sen, S. (2010). International trade theory and policy: A review of the literature.

Schott, P. K. (2003). One size fits all? Heckscher-Ohlin specialization in global production. *The American Economic Review*, *93*(3), 686-708.

Shleifer, R. W. V. (1993). Corruption. *The Quarterly Journal of Economics*, *108*(3), 599–617. Retrieved from http://www.jstor.org/stable/2118402

Shenkar, O. (2001). Cultural distance revisited: Towards a more rigorous conceptualization and measurement of cultural differences. *Journal of International Business Studies*, 519–535.

Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations: Volume One.* London: printed for W. Strahan; and T. Cadell.

Stilgitz, J. (2016, 05 25). Corrupting the Fight Against Corruption. *Project Syndicate*, pp. 1-4.

Svensson, J. (2005). Eight questions about corruption. *The Journal of Economic Perspectives, 19*, 19-42.

Tanzi, V. (1998). Corruption around the world: Causes, consequences, scope, and cures. *Staff Papers-International Monetary Fund*, 559–594.

Transparency International. (2015). Retrieved from Transparency International Web site: www.transparency.org/cpi2015/in_detail

Transparency International. (2017, May 28). *Who we are: Transparency International*. Retrieved from Transparency International: https://www.transparency.org/whoweare/organisation/

Uhlenbruck, K., Rodriguez, P., Doh, J., & Eden, L. (2006). The impact of corruption on entry strategy: Evidence from telecommunication projects in emerging economies. *Organization Science, 17*(3), 402–414.

United Nations. (2009). UNCTAD Training Manual on Statistics for FDI and the Operations of TNC's.

United Nations. (2012). *World Investment Report 2012*. United Nations Publication.

UNCTAD. (2015). World Investment Report 2015: Reforming International Investment Governance. Geneva: United Nations Publishing

UNCTAD. (2016). Retrieved from UNCTAD web site: www.unctad.org/fdistatistics

UNDP. (2016). Retrieved from UNDP Web site: http://hdr.undp.org/en/data

Wei, S.-J. (2000). How taxing is corruption on international investors? *The Review of Economics and Statistics, 1*, 471–482.

Weiers, R. (2011). *Introductory Business Statistics: International Edition.* South-Western, Cengage Learning.

World Bank. (1998, May). Corruption and development. *PREM notes, Number 4*.

World Investment Report. (2016). *World Investment Report 2016*. United Nations Publications.

7 Appendix 1: African countries considered in the study

Country	Average of FDI_inflows	Average of CPI
Algeria	1786627476	2.889375222
Angola	-1167761753	1.989448333
Benin	88492472.38	2.88373125
Botswana	556762607.3	5.764209111
Burkina Faso	114900996.6	7.348409222
Burundi	1696815.183	2.090748
Cameroon	356445432.6	2.216916333
Central African Republic	41602400.53	2.118404
Chad	274179114.4	1.767557875
Congo	1519533479	2.2
Congo, Dem. Rep.	349835393.8	1.952633375
Cote d'Ivoire	350098529	2.081522667
Egypt, Arab Rep.	5235109091	3.073576333
Equatorial Guinea	979944662.7	1.887453857
Ethiopia	410800947.9	2.498990222
Gabon	492872194.3	3.03537525
Gambia, The	50047686.4	2.701322889
Ghana	1802190298	3.683417778
Guinea	274156000	1.885048833
Kenya	181250875	2.115943333
Lesotho	48004409.79	3.345157857
Libya	1768430000	2.40161
Madagascar	598939233.4	2.982311556
Malawi	229605140.2	2.922476111
Mali	292559289.8	2.884300111
Mauritania	471180345.7	2.621224667
Mauritius	267809695	4.874127556
Morocco	2208508721	3.338156444
Mozambique	1836186598	2.709746889
Namibia	604533928.5	4.392183333
Niger	416074781.5	2.542557375
Nigeria	5818449608	2.149926222
Rwanda	83985682.66	3.383345571
Senegal	273447771.5	3.163392111
Sierra Leone	256306267.3	2.240101
South Africa	4856121847	4.597808556
Sudan	1722275934	1.851528667
Swaziland	58321444.26	3.140253429
Tanzania	1086033700	2.838947333
Togo	149261760.7	2.497023

Tunisia	1373233972	4.473255444
Uganda	693088406.5	2.537099667
Zambia	1028199091	2.766138333
Zimbabwe	157563636.4	2.258863

8 Appendix 2: Foreign Countries considered in the study

Country	Average CPI
Myanmar	1.554477
Haiti	1.711098
Iraq	1.778236
Turkmenistan	1.850397
Uzbekistan	1.936063
Bangladesh	2.006324
Cambodia	2.058651
Tajikistan	2.068283
Kyrgyzstan	2.079986
Venezuela	2.109944
Azerbaijan	2.152804
Paraguay	2.16863
Papua New Guinea	2.196165
Laos	2.301995
Ecuador	2.316691
Pakistan	2.329772
Yemen	2.386705
Russia	2.394306
Timor-Leste	2.412689
Ukraine	2.444097
Indonesia	2.447534
Nepal	2.463903
Honduras	2.476878
Philippines	2.4827
Kazakhstan	2.488219
Iran	2.557819
Guyana	2.569661
Nicaragua	2.56995
Belarus	2.624258
Vietnam	2.640487
Bolivia	2.65147
Guatemala	2.769753
Syria	2.806424
Argentina	2.810675
Moldova	2.842105
Armenia	2.858777
Mongolia	2.859589
Albania	2.87255
Lebanon	2.876316
Dominican Republic	2.954419
Georgia	3.136997

India	3.166565
Sri Lanka	3.243908
Serbia	3.352133
Romania	3.379127
Jamaica	3.38236
Mexico	3.385651
Panama	3.396244
China	3.459508
Suriname	3.475514
Thailand	3.486778
Peru	3.520623
Brazil	3.66379
Trinidad and Tobago	3.685586
Colombia	3.738519
El Salvador	3.824988
Bulgaria	3.825441
Croatia	3.859361
Saudi Arabia	3.876295
Turkey	3.922985
Cuba	4.040438
Greece	4.143219
Poland	4.309158
Slovakia	4.374624
Latvia	4.388256
Kuwait	4.579559
Czech Republic	4.607565
Italy	4.678546
Lithuania	4.772441
Costa Rica	4.777566
Malaysia	4.85638
Hungary	4.950605
Jordan	4.987306
Korea (South)	5.095155
Dominica	5.39576
Bahrain	5.434431
Bhutan	5.440394
Oman	5.548286
Taiwan	5.781812
Cyprus	5.962849
Malta	5.974058
United Arab Emirates	6.102543
Israel	6.189653
Portugal	6.277512
Slovenia	6.28561
Qatar	6.339474

Estonia	6.350401
Uruguay	6.471607
Spain	6.603289
France	7.089452
Chile	7.157095
Barbados	7.221738
Belgium	7.320826
United States	7.348409
Japan	7.4601
Ireland	7.615115
Germany	7.971794
Austria	8.165211
United Kingdom	8.18612
Hong Kong	8.221091
Luxembourg	8.456337
Canada	8.641384
Norway	8.687762
Australia	8.73824
Netherlands	8.821611
Switzerland	8.955742
Iceland	9.108225
Sweden	9.244276
Singapore	9.296315
Finland	9.389325
Denmark	9.410231
New Zealand	9.46252

9 Appendix 3: Data set Corruption, FDI, GDP

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Algeria	2003	637881239	2.6	0.453727	-2.5714	0.939943	67,863,829,704.76	24.94077
Algeria	2004	881851385	2.7	0.510317	-2.45502	1.033521	85,324,998,959.30	25.16973
Algeria	2005	1156000000	2.8	0.502905	-2.48946	1.120174	103,198,229,168.23	25.35992
Algeria	2006	1841000000	3.1	0.648611	-2.60875	1.573137	117,027,304,787.84	25.48567
Algeria	2007	1686736540	3	0.680303	-2.52759	1.249647	134,977,088,396.42	25.62837
Algeria	2008	2638607034	3.2	0.859127	-2.50482	1.543039	171,000,692,134.75	25.86493
Algeria	2009	2746930734	2.8	0.601786	-2.4866	2.001975	137,211,039,899.57	25.64479
Algeria	2010	2300369124	2.9	0.614516	-2.5327	1.426964	161,207,268,840.91	25.80596
Algeria	2011	2571237025	2.904377	0.565538	-2.41152	1.285535	200,013,050,828.17	26.02165
Algeria	2012	1500402453	2.889375	0.527254	-2.53737	0.717733	209,047,389,599.67	26.06583
Algeria	2013	1691886708	2.889375	0.527254	-2.53737	0.806799	209,703,529,364.33	26.06896
Angola	2003	3576971780	1.8	0.272074	-2.45355	25.20956	14,188,949,190.62	23.37573
Angola	2004	2197227820	2	0.269722	-2.34808	11.18703	19,640,848,728.89	23.70088

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Angola	2005	-1303836930	2	0.179439	-2.28607	-4.61801	28,233,712,830.90	24.06378
Angola	2006	-37714860	2.2	0.2	-2.25588	-0.09025	41,789,478,661.31	24.45591
Angola	2007	-893342152	2.2	0.261538	-2.38915	-1.47785	60,448,921,272.23	24.82506
Angola	2008	1678971010	1.9	0.27	-2.4628	1.994548	84,178,032,716.10	25.1562
Angola	2009	2205298180	1.9	0.218182	-2.46224	2.921219	75,492,384,801.37	25.0473
Angola	2010	-3227211182	1.9	0.29	-2.44983	-3.91315	82,470,913,120.73	25.13571
Angola	2011	-3023770966	2.005035	0.269178	-2.26738	-2.90423	104,115,923,082.74	25.36877
Angola	2012	-6897954559	1.989448	0.171999	-2.29215	-5.97751	115,398,371,427.67	25.47166
Angola	2013	-7120017424	1.989448	0.171999	-2.29215	-5.70002	124,912,063,308.20	25.55088
Benin	2003	10614240.65	2.883731	0.637875	-2.52648	0.271786	3,905,366,187.87	22.08562
Benin	2004	-40701529.97	3.2	0.839123	-2.49157	-0.90019	4,521,424,807.23	22.23209
Benin	2005	-8785364.695	2.9	0.562349	-2.60669	-0.18289	4,803,702,821.08	22.29265
Benin	2006	-12352499.85	2.5	0.317647	-2.32696	-0.24021	5,142,380,779.44	22.36078
Benin	2007	139006086.8	2.7	0.509615	-2.4402	2.328591	5,969,535,131.58	22.50993
Benin	2008	48016408.32	3.1	0.77619	-2.50814	0.673179	7,132,787,396.67	22.68797

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Benin	2009	-18732013.56	2.9	0.653968	-2.50108	-0.26394	7,097,198,711.61	22.68297
Benin	2010	53454932.99	2.8	0.55	-2.50079	0.766902	6,970,240,895.50	22.66492
Benin	2011	161091309	2.96985	0.6129	-2.39725	2.061552	7,814,081,155.65	22.77919
Benin	2012	281564661.1	2.883731	0.537668	-2.4878	3.468784	8,117,100,933.53	22.81724
Benin	2013	360240965.3	2.883731	0.537668	-2.4878	3.953999	9,110,800,744.88	22.93273
Botswana	2003	417985826.4	5.7	2.631908	-2.16237	5.564551	7,511,582,173.38	22.73971
Botswana	2004	391066916.2	6	2.912097	-1.93871	4.36582	8,957,467,706.54	22.91575
Botswana	2005	278591244.1	5.9	2.821126	-2.02188	2.805231	9,931,134,940.51	23.01894
Botswana	2006	486640084.8	5.6	2.5625	-2.06944	4.805401	10,126,940,513.31	23.03847
Botswana	2007	494681695	5.4	2.326446	-2.22571	4.522162	10,939,053,365.48	23.11561
Botswana	2008	520918029.5	5.8	2.675878	-1.82941	4.759385	10,945,070,441.93	23.11616
Botswana	2009	208699414	5.6	2.509016	-2.07647	2.032695	10,267,128,733.35	23.05221
Botswana	2010	218379961.1	5.8	2.692069	-1.96364	1.707873	12,786,662,034.86	23.27167
Botswana	2011	1371086982	6.077882	2.957606	-1.77688	8.742542	15,682,931,970.40	23.47584
Botswana	2012	855456446.3	5.764209	2.659035	-1.87703	5.82488	14,686,249,032.04	23.41018

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Botswana	2013	880882080	5.764209	2.681111	-1.88311	5.945959	14,814,801,573.11	23.41889
Burkina Faso	2003	30831022.58	7.5	4.085223	-1.30588	0.733079	4,205,691,222.11	22.1597
Burkina Faso	2004	3829373.785	7.5	4.06087	-1.4	0.079143	4,838,551,099.71	22.29988
Burkina Faso	2005	32254080.61	7.6	4.068409	-1.34375	0.590441	5,462,709,498.45	22.42121
Burkina Faso	2006	83774772.55	7.3	3.911852	-1.39474	1.433353	5,844,669,845.54	22.4888
Burkina Faso	2007	21683121.76	7.2	3.759854	-1.39474	0.320222	6,771,277,870.96	22.63596
Burkina Faso	2008	33056780.41	7.3	3.823045	-1.28824	0.394961	8,369,637,065.40	22.84788
Burkina Faso	2009	56426881.77	7.5	4.011594	-1.07222	0.674223	8,369,175,126.25	22.84782
Burkina Faso	2010	38832813.08	7.1	3.732272	-1.34286	0.432438	8,979,966,766.07	22.91826
Burkina Faso	2011	143657274.8	7.135683	3.771797	-1.26946	1.339579	10,724,061,338.59	23.09576
Burkina Faso	2012	329300811.2	7.348409	3.877176	-1.30889	2.949122	11,166,061,507.80	23.13614
Burkina Faso	2013	490264030.5	7.348409	3.877176	-1.30889	4.047031	12,114,166,020.72	23.21764
Burundi	2003		2.090748	0.335096	-2.29592	..	784,654,423.62	20.48075
Burundi	2004	44690.7076	2.090748	0.230092	-2.28981	0.004883	915,257,323.40	20.63472
Burundi	2005	584701.6926	2.3	0.279023	-2.31265	0.052334	1,117,257,279.46	20.83414

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Burundi	2006	31593.77819	2.4	0.284615	-2.25806	0.002481	1,273,180,597.03	20.96478
Burundi	2007	500245.0931	2.5	0.442105	-2.39646	0.036889	1,356,078,278.19	21.02786
Burundi	2008	3833208.348	1.9	0.272727	-2.49748	0.237846	1,611,634,331.65	21.20051
Burundi	2009	348404.5346	1.8	0.22	-2.46309	0.020026	1,739,781,488.75	21.27703
Burundi	2010	780582.0036	1.8	0.211111	-2.49983	0.038512	2,026,864,469.36	21.42976
Burundi	2011	3354999.181	1.935236	0.224302	-2.32196	0.142423	2,355,652,125.85	21.58008
Burundi	2012	604919.6515	2.090748	0.187079	-2.2852	0.024467	2,472,384,907.00	21.62845
Burundi	2013	6884806.836	2.090748	0.187079	-2.2852	0.25363	2,714,505,634.53	21.72188
Cameroon	2003	334137809.9	1.8	0.272074	-2.45355	2.452975	13,621,738,837.20	23.33493
Cameroon	2004	67863015.12	2.1	0.226561	-2.34763	0.430184	15,775,357,014.63	23.48171
Cameroon	2005	243504753.3	2.2	0.252738	-2.3091	1.46797	16,587,858,856.68	23.53194
Cameroon	2006	59069772.85	2.3	0.218182	-2.22121	0.329023	17,953,066,721.09	23.61103
Cameroon	2007	189330876.4	2.4	0.393939	-2.35667	0.926649	20,431,780,377.86	23.74036
Cameroon	2008	20910875.62	2.3	0.395536	-2.46803	0.089661	23,322,254,113.56	23.87267
Cameroon	2009	743285027.3	2.2	0.321739	-2.44173	3.178994	23,381,142,146.65	23.8752

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Cameroon	2010	535742601.5	2.2	0.354167	-2.44784	2.267935	23,622,483,983.71	23.88546
Cameroon	2011	652411755.8	2.452247	0.343072	-2.27141	2.453846	26,587,311,527.57	24.0037
Cameroon	2012	527394101.2	2.216916	0.226465	-2.31021	1.992267	26,472,056,037.77	23.99936
Cameroon	2013	547249169.1	2.216916	0.226465	-2.31021	1.850847	29,567,504,655.49	24.10994
Central African Republic	2003	11300000	2.118404	0.288296	-2.35345	0.991441	1,139,754,799.16	20.85408
Central African Republic	2004	15100000	2.118404	0.203772	-2.34648	1.188901	1,270,080,250.65	20.96235
Central African Republic	2005	10100000	2.118404	0.181838	-2.27606	0.747981	1,350,301,057.07	21.02359
Central African Republic	2006	34670000	2.4	0.284615	-2.25806	2.373744	1,460,562,038.37	21.10209
Central African Republic	2007	56750000	2	0.3	-2.41	3.34192	1,698,125,617.92	21.25279
Central African Republic	2008	117110000	2	0.292857	-2.48279	5.898648	1,985,370,057.92	21.40907
Central African Republic	2009	42280000	2	0.255556	-2.50667	2.133491	1,981,728,140.78	21.40724
Central African Republic	2010	61520000	2.1	0.285213	-2.33011	3.097661	1,986,014,845.63	21.4094
Central African Republic	2011	36908455.89	2.210424	0.274251	-2.23349	1.668028	2,212,699,746.81	21.51748
Central African Republic	2012	70035157.33	2.118404	0.18286	-2.3067	3.206468	2,184,183,758.32	21.50451
Central African Republic	2013	1852792.612	2.118404	0.178748	-2.30759	0.124009	1,494,073,354.38	21.12477

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Chad	2003	712663454.9	1.767558	0.287558	-2.40528	26.0413	2,736,666,515.83	21.73001
Chad	2004	466793492.1	1.7	0.166667	-2.47647	10.57307	4,414,929,220.00	22.20826
Chad	2005	-99342519.36	1.7	#DIV/0!	-2.46232	-1.49462	6,646,663,021.44	22.61738
Chad	2006	-278414000	2	0.125	-2.242	-3.75115	7,422,102,519.57	22.72773
Chad	2007	-321655000	1.8	0.25	-2.40526	-3.72341	8,638,711,756.63	22.87952
Chad	2008	466131000	1.6	0.266667	-2.61466	4.50284	10,351,933,631.72	23.06044
Chad	2009	374900000	1.6	0.133333	-2.58117	4.051447	9,253,484,289.67	22.94827
Chad	2010	313000000	1.7	0.15	-2.56695	2.936842	10,657,705,072.29	23.08955
Chad	2011	281900000	2.040463	0.235188	-2.27844	2.318947	12,156,380,062.05	23.22112
Chad	2012	579793037.4	1.767558	0.13477	-2.39067	4.687821	12,368,070,168.97	23.23838
Chad	2013	520200793.5	1.767558	0.13477	-2.39067	4.01704	12,949,854,262.81	23.28435
Congo	2003	219545648.8	2.2	0.357879	-2.35991	6.280146	3,495,868,724.68	21.97485
Congo	2004	88399286.1	2.2	0.276508	-2.40756	1.901621	4,648,628,839.53	22.25984
Congo	2005	800996241.6	2.2	0.252738	-2.3091	13.15912	6,087,002,681.74	22.52942
Congo	2006	1487693084	2.2	0.2	-2.25588	19.24257	7,731,261,310.93	22.76854

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Congo	2007	2638405260	2.2	0.261538	-2.38915	31.42946	8,394,688,284.06	22.85086
Congo	2008	2031879948	2.2	0.336813	-2.48651	17.13363	11,859,014,004.08	23.19635
Congo	2009	1273828534	2.2	0.352174	-2.46349	13.27799	9,593,536,531.24	22.98436
Congo	2010	928436006.5	2.2	0.354167	-2.4295	7.731889	12,007,880,590.46	23.20883
Congo	2011	2179856146	2.2	0.267713	-2.24392	15.11102	14,425,607,224.17	23.39227
Congo	2012	2151894023	2.2	0.234592	-2.27705	15.7326	13,677,930,123.59	23.33905
Congo	2013	2913934094	2.2	0.21828	-2.30975	20.68696	14,085,852,120.48	23.36844
Congo, Dem. Rep.	2003	391254723.6	1.952633	0.22823	-2.40124	4.377642	8,937,567,059.88	22.91353
Congo, Dem. Rep.	2004	409032814.5	2	0.269722	-2.34808	3.972163	10,297,483,481.22	23.05517
Congo, Dem. Rep.	2005	166600000	2.1	0.261495	-2.27843	1.392454	11,964,484,667.91	23.20521
Congo, Dem. Rep.	2006	237700000	2	0.125	-2.242	1.662644	14,296,507,096.41	23.38328
Congo, Dem. Rep.	2007	1793700000	1.9	0.266667	-2.36757	10.96124	16,364,029,327.35	23.51835
Congo, Dem. Rep.	2008	1672700000	1.7	0.3	-2.52923	8.70923	19,206,060,270.25	23.67849
Congo, Dem. Rep.	2009	-34800000	1.9	0.218182	-2.46224	-0.19055	18,262,773,820.81	23.62813
Congo, Dem. Rep.	2010	124100000	2	0.307692	-2.41697	0.604679	20,523,285,374.19	23.74483

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Congo, Dem. Rep.	2011	-90900000	2.021067	0.235409	-2.28223	-0.38115	23,849,009,737.67	23.89501
Congo, Dem. Rep.	2012	-420534933.8	1.952633	0.150204	-2.31347	-1.53127	27,463,220,380.01	24.03611
Congo, Dem. Rep.	2013	-400663272.5	1.952633	0.150204	-2.31347	-1.33489	30,014,813,755.77	24.12496
Cote d'Ivoire	2003	165347467.5	2.1	0.326711	-2.35442	1.080236	15,306,602,560.25	23.45155
Cote d'Ivoire	2004	282979933.1	2	0.269722	-2.34808	1.70939	16,554,441,846.52	23.52992
Cote d'Ivoire	2005	348920761.5	1.9	0.119159	-2.37072	2.042272	17,084,928,927.46	23.56146
Cote d'Ivoire	2006	350652855.7	2.1	0.1625	-2.21586	1.969862	17,800,887,796.50	23.60251
Cote d'Ivoire	2007	443215533.1	2.1	0.2625	-2.43485	2.178645	20,343,635,319.62	23.73603
Cote d'Ivoire	2008	466489597	2	0.29375	-2.50252	1.925661	24,224,903,099.63	23.91065
Cote d'Ivoire	2009	396030774	2.1	0.283333	-2.41418	1.631267	24,277,493,862.06	23.91282
Cote d'Ivoire	2010	358118909	2.2	0.36087	-2.4295	1.439124	24,884,505,034.56	23.93751
Cote d'Ivoire	2011	301577298.6	2.233704	0.25148	-2.27861	1.188172	25,381,616,734.07	23.95729
Cote d'Ivoire	2012	330274411.5	2.081523	0.18971	-2.27833	1.221404	27,040,562,587.18	24.0206
Cote d'Ivoire	2013	407476278.3	2.081523	0.18971	-2.27833	1.302151	31,292,560,974.42	24.16665
Egypt, Arab Rep.	2003	237400000	3.3	0.921906	-2.45428	0.286284	82,924,503,942.64	25.1412

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Egypt, Arab Rep.	2004	1253300000	3.2	0.853892	-2.49237	1.589571	78,845,185,293.50	25.09075
Egypt, Arab Rep.	2005	5375600000	3.4	0.887969	-2.69052	5.993819	89,685,725,230.25	25.21958
Egypt, Arab Rep.	2006	10042800000	3.3	0.764634	-2.88209	9.343527	107,484,034,870.97	25.40061
Egypt, Arab Rep.	2007	11578100000	2.9	0.617742	-2.49022	8.873538	130,478,960,092.50	25.59448
Egypt, Arab Rep.	2008	9494600000	2.8	0.657682	-2.39412	5.831413	162,818,181,818.18	25.8159
Egypt, Arab Rep.	2009	6711600000	2.8	0.563333	-2.5957	3.551442	188,982,374,700.81	25.96492
Egypt, Arab Rep.	2010	6385600000	3.1	0.777612	-2.47297	2.917287	218,888,324,504.75	26.11183
Egypt, Arab Rep.	2011	-482700000	2.862187	0.559292	-2.35426	-0.20453	236,001,858,960.02	26.18711
Egypt, Arab Rep.	2012	2797700000	3.073576	0.670159	-2.49629	1.012363	276,353,323,880.22	26.34495
Egypt, Arab Rep.	2013	4192200000	3.073576	0.670159	-2.49629	1.465747	286,011,230,726.27	26.3793
Equatorial Guinea	2003	689779766	1.887454	0.202607	-2.41566	27.76058	2,484,745,935.09	21.63344
Equatorial Guinea	2004	340914468.5	1.887454	0.239946	-2.31935	7.729147	4,410,764,338.67	22.20731
Equatorial Guinea	2005	769146185.2	1.9	0.119159	-2.37072	9.360005	8,217,369,092.65	22.82952
Equatorial Guinea	2006	469506014.6	2.1	0.1625	-2.21586	5.134191	9,144,693,758.21	22.93644
Equatorial Guinea	2007	1242731087	1.9	0.2875	-2.41096	11.53162	10,776,721,748.10	23.10065

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Equatorial Guinea	2008	-793872332.8	1.7	0.233333	-2.56295	-4.95498	16,021,701,871.77	23.49721
Equatorial Guinea	2009	1636219625	1.8	0.266667	-2.45235	16.01081	10,219,467,607.38	23.04756
Equatorial Guinea	2010	2734000000	1.9	0.3	-2.36561	21.51147	12,709,498,548.49	23.26562
Equatorial Guinea	2011	1975000000	1.912177	0.165991	-2.34152	11.46273	17,229,758,159.78	23.5699
Equatorial Guinea	2012	985256411.5	1.887454	0.116262	-2.3477	5.470291	18,011,041,667.13	23.61425
Equatorial Guinea	2013	730710064	1.887454	0.195861	-2.33611	4.264284	17,135,584,684.64	23.56442
Ethiopia	2003	465000000	2.5	0.43667	-2.52503	5.392123	8,623,691,300.04	22.87778
Ethiopia	2004	545100000	2.3	0.305151	-2.44216	5.380416	10,131,187,261.44	23.03888
Ethiopia	2005	265111675.5	2.2	0.252738	-2.3091	2.137801	12,401,139,453.97	23.24105
Ethiopia	2006	545257102.2	2.4	0.284615	-2.25806	3.568235	15,280,861,834.60	23.44987
Ethiopia	2007	222000573	2.4	0.393939	-2.35667	1.126471	19,707,616,772.80	23.70427
Ethiopia	2008	108537544	2.6	0.545714	-2.48037	0.400997	27,066,912,635.22	24.02158
Ethiopia	2009	221459581.4	2.7	0.608333	-2.47549	0.682729	32,437,389,116.04	24.20258
Ethiopia	2010	288271568.3	2.7	0.511765	-2.50076	0.963031	29,933,790,334.34	24.12225
Ethiopia	2011	626509560.4	2.690912	0.435896	-2.3835	1.960737	31,952,763,089.33	24.18752

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Ethiopia	2012	278562822.2	2.49899	0.348484	-2.34221	0.643173	43,310,721,414.08	24.49167
Ethiopia	2013	953000000	2.49899	0.348484	-2.34221	2.000075	47,648,211,133.22	24.58711
Gabon	2003	99666154.02	3.035375	0.738048	-2.51455	1.533961	6,497,305,662.09	22.59465
Gabon	2004	313970792	3.3	0.884634	-2.48355	4.047949	7,756,293,574.98	22.77177
Gabon	2005	326161877.9	2.9	0.562349	-2.60669	3.448206	9,458,884,812.18	22.97022
Gabon	2006	267805315.6	3	0.572464	-2.52674	2.637426	10,154,041,929.65	23.04114
Gabon	2007	269324270.3	3.3	0.898649	-2.53636	2.165168	12,438,956,756.45	23.2441
Gabon	2008	773000000	3.1	0.815778	-2.51744	4.984339	15,508,574,820.35	23.46466
Gabon	2009	573000000	2.9	0.612308	-2.55889	4.74922	12,065,138,272.75	23.21359
Gabon	2010	499000000	2.8	0.55	-2.50079	3.475273	14,358,584,300.30	23.38761
Gabon	2011	696000000	2.983002	0.602557	-2.47001	3.827019	18,186,478,119.96	23.62394
Gabon	2012	832473111.1	3.035375	0.636736	-2.4987	4.848008	17,171,447,372.33	23.56651
Gabon	2013	771192616	3.035375	0.640858	-2.50547	4.384089	17,590,716,232.49	23.59064
Gambia, The	2003	18272720.34	2.5	0.43667	-2.52503	3.7518	487,038,821.61	20.00385
Gambia, The	2004	55526319.44	2.8	0.583458	-2.53039	9.593596	578,785,278.77	20.17644

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Gambia, The	2005	53650280.02	2.7	0.425289	-2.46622	8.595395	624,174,723.71	20.25194
Gambia, The	2006	82208102.59	2.5	0.317647	-2.32696	12.54954	655,068,695.95	20.30025
Gambia, The	2007	78099786.49	2.3	0.334483	-2.3624	9.776271	798,870,894.21	20.49871
Gambia, The	2008	78614989.73	1.9	0.209856	-2.44561	8.140143	965,769,128.17	20.68844
Gambia, The	2009	39447343.71	2.9	0.652459	-2.5163	4.379925	900,639,747.94	20.61862
Gambia, The	2010	37366207.68	3.2	0.791071	-2.46269	3.923254	952,429,030.42	20.67453
Gambia, The	2011	36178721.37	3.511906	0.934611	-2.65639	4.000935	904,256,643.42	20.62262
Gambia, The	2012	33524808.59	2.701323	0.442977	-2.41411	3.673671	912,569,686.79	20.63178
Gambia, The	2013	37635270.43	2.701323	0.491127	-2.37972	4.164209	903,779,657.12	20.6221
Ghana	2003	136751000	3.3	0.958855	-2.48658	1.791715	7,632,406,552.84	22.75567
Ghana	2004	139270000	3.6	1.042625	-2.64671	1.568114	8,881,368,538.08	22.90722
Ghana	2005	144970000	3.5	0.927426	-2.78979	1.350866	10,731,634,116.74	23.09646
Ghana	2006	636010000	3.3	0.764634	-2.88209	3.116282	20,409,257,610.47	23.73925
Ghana	2007	1383177930	3.7	1.101087	-2.58906	5.586607	24,758,819,717.71	23.93245
Ghana	2008	2714916344	3.9	1.292012	-2.51452	9.517043	28,526,891,010.49	24.07411

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Ghana	2009	2372540000	3.9	1.266316	-2.48387	9.132935	25,977,847,813.74	23.98051
Ghana	2010	2527350000	4.1	1.427801	-2.45517	7.855067	32,174,772,955.97	24.19445
Ghana	2011	3247588000	3.85076	1.201871	-2.51134	8.207966	39,566,292,432.86	24.40124
Ghana	2012	3294520000	3.683418	1.084086	-2.51864	7.855368	41,939,728,978.73	24.4595
Ghana	2013	3227000000	3.683418	1.084086	-2.51864	6.75033	47,805,069,494.91	24.5904
Guinea	2003	78966000	1.885049	0.223894	-2.35929	2.291232	3,446,442,218.90	21.96061
Guinea	2004	0	1.885049	0.318382	-2.2684	0	3,666,349,049.43	22.02246
Guinea	2005	105000000	1.885049	0.151604	-2.37945	3.574989	2,937,071,767.26	21.80068
Guinea	2006	125000000	1.9	0.153137	-2.33772	4.263847	2,931,625,104.50	21.79882
Guinea	2007	385900000	1.9	0.266667	-2.36757	9.334393	4,134,173,275.12	22.14255
Guinea	2008	381880000	1.6	0.225	-2.62923	8.456484	4,515,824,647.44	22.23085
Guinea	2009	140850000	1.8	0.22	-2.47838	3.055365	4,609,923,756.18	22.25148
Guinea	2010	101350000	2	0.3	-2.41697	2.140011	4,735,956,493.06	22.27845
Guinea	2011	956040000	2.110293	0.268571	-2.23971	18.86663	5,067,360,009.39	22.34609
Guinea	2012	605400000	1.885049	0.132833	-2.33455	10.68247	5,667,229,758.99	22.45797

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Guinea	2013	135330000	1.885049	0.132833	-2.33455	2.17163	6,231,725,484.56	22.55292
Kenya	2003	81738242.64	1.9	0.200682	-2.43696	0.548413	14,904,517,649.85	23.42493
Kenya	2004	46063931.45	2.1	0.226561	-2.34763	0.286194	16,095,337,093.84	23.5018
Kenya	2005	21211685.4	2.1	0.261495	-2.27843	0.113202	18,737,895,401.13	23.65381
Kenya	2006	50674725.18	2.2	0.2	-2.25588	0.19622	25,825,524,820.81	23.97463
Kenya	2007	729044146	2.1	0.2625	-2.43485	2.281243	31,958,195,182.24	24.18769
Kenya	2008	95585680.23	2.1	0.311688	-2.49389	0.266291	35,895,153,327.85	24.30387
Kenya	2009	116257609	2.2	0.331818	-2.44173	0.314027	37,021,512,048.82	24.33476
Kenya	2010	178064606.8	2.1	0.338889	-2.42071	0.445165	39,999,659,233.76	24.41214
Kenya	2011	139862091.1	2.24349	0.251206	-2.28601	0.333375	41,953,433,591.41	24.45983
Kenya	2012	163410210.3	2.115943	0.190421	-2.29257	0.324161	50,410,164,013.55	24.64346
Kenya	2013	371846696.4	2.115943	0.190421	-2.29257	0.674848	55,100,780,396.39	24.73243
Lesotho	2003	43948139.98	3.345158	0.944085	-2.47313	4.534629	969,167,237.30	20.69195
Lesotho	2004	55671430.94	3.345158	0.896618	-2.47006	4.510674	1,234,215,384.85	20.9337
Lesotho	2005	27440317.19	3.4	0.887969	-2.69052	2.005354	1,368,352,570.25	21.03687

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Lesotho	2006	24322286.69	3.2	0.698718	-2.64079	1.702225	1,428,852,972.02	21.08014
Lesotho	2007	75610320.58	3.3	0.888	-2.48974	4.733109	1,597,476,793.37	21.19169
Lesotho	2008	11011198.57	3.2	0.846627	-2.49398	0.675255	1,630,672,202.59	21.21226
Lesotho	2009	91351945.08	3.3	0.921622	-2.43086	5.337808	1,711,412,960.10	21.26059
Lesotho	2010	30441963.01	3.5	1.032806	-2.57143	1.391643	2,187,482,926.30	21.50602
Lesotho	2011	61173319.21	3.516105	0.930049	-2.67291	2.424329	2,523,309,140.49	21.64884
Lesotho	2012	56648555.1	3.345158	0.872893	-2.43567	2.376154	2,384,043,848.96	21.59206
Lesotho	2013	50429031.34	3.345158	0.880833	-2.39339	2.273521	2,218,102,350.05	21.51992
Libya	2003	143000000	2.1	0.326711	-2.35442	0.544438	26,265,625,000.00	23.99153
Libya	2004	357000000	2.5	0.395862	-2.3891	1.077823	33,122,307,692.31	24.22347
Libya	2005	1038000000	2.5	0.321279	-2.45171	2.19292	47,334,148,578.42	24.5805
Libya	2006	2064000000	2.7	0.417647	-2.45446	3.755326	54,961,936,662.61	24.72991
Libya	2007	4689000000	2.5	0.536111	-2.36121	6.944996	67,516,236,337.72	24.93563
Libya	2008	4111300000	2.6	0.523897	-2.4205	4.718018	87,140,405,361.23	25.19079
Libya	2009	1371000000	2.5	0.486842	-2.44107	2.175213	63,028,320,702.03	24.86685

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Libya	2010	1784000000	2.2	0.300665	-2.33147	2.385874	74,773,444,900.54	25.03773
Libya	2011		2.01449	0.22341	-2.29813	..	34,699,395,523.61	24.26999
Libya	2012	1425000000	2.40161	0.334743	-2.26734	1.739813	81,905,365,776.33	25.12883
Libya	2013	702000000	2.40161	0.315881	-2.31675	1.071683	65,504,442,871.75	24.90538
Madagascar	2003	12874087	2.6	0.444845	-2.53703	0.235185	5,474,030,080.24	22.42328
Madagascar	2004	52910748	3.1	0.779272	-2.47556	1.212455	4,363,934,494.37	22.19664
Madagascar	2005	85428623.9	2.8	0.534317	-2.50476	1.69525	5,039,293,030.82	22.34053
Madagascar	2006	294681941.5	3.1	0.648611	-2.60875	5.342424	5,515,884,348.55	22.4309
Madagascar	2007	789389724.1	3.2	0.832394	-2.43976	10.75035	7,342,923,489.10	22.717
Madagascar	2008	1134497642	3.4	1.024762	-2.48442	12.05245	9,413,002,920.97	22.96536
Madagascar	2009	1293330142	3	0.70303	-2.55517	15.12602	8,550,363,974.79	22.86924
Madagascar	2010	809707320.3	2.6	0.446809	-2.43715	9.275066	8,729,936,135.74	22.89002
Madagascar	2011	738462649	3.040804	0.621634	-2.52066	7.464721	9,892,702,357.57	23.01506
Madagascar	2012	810503138.6	2.982312	0.596192	-2.52973	8.170576	9,919,780,071.29	23.0178
Madagascar	2013	566545549.9	2.982312	0.596192	-2.52973	5.337984	10,613,473,832.74	23.08539

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Malawi	2003	65885630.02	2.8	0.590856	-2.55562	2.053044	3,209,167,240.45	21.88928
Malawi	2004	107811374	2.8	0.583458	-2.53039	3.101295	3,476,333,638.66	21.96924
Malawi	2005	139696707.4	2.8	0.502905	-2.48946	3.821138	3,655,892,941.67	22.01961
Malawi	2006	35561531.63	2.7	0.384906	-2.456	0.889479	3,998,020,176.93	22.10907
Malawi	2007	124388838.7	2.7	0.509615	-2.4402	2.806014	4,432,937,045.80	22.21233
Malawi	2008	195424461.1	2.8	0.657682	-2.41287	3.672693	5,321,012,192.34	22.39493
Malawi	2009	49130854.84	3.3	0.938356	-2.40732	0.793569	6,191,127,665.20	22.54638
Malawi	2010	97010028.45	3.4	0.906206	-2.44703	1.393891	6,959,655,570.89	22.6634
Malawi	2011	1128341392	3.002285	0.620773	-2.45117	14.09722	8,004,000,737.31	22.80321
Malawi	2012	-52302532.29	2.922476	0.558421	-2.49865	-0.86759	6,028,487,928.83	22.51976
Malawi	2013	634708256.1	2.922476	0.55703	-2.58007	11.50067	5,518,880,768.58	22.43144
Mali	2003	72355432.36	3	0.744624	-2.52102	1.53833	4,703,504,466.48	22.27157
Mali	2004	84840599.64	3.2	0.839123	-2.49157	1.558288	5,444,474,268.42	22.41787
Mali	2005	160218206.8	2.9	0.562349	-2.60669	2.565531	6,245,031,690.07	22.55505
Mali	2006	148195574.1	2.8	0.451724	-2.50638	2.147824	6,899,799,785.84	22.65476

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Mali	2007	206064771.4	2.7	0.509615	-2.4402	2.529738	8,145,694,631.88	22.82076
Mali	2008	266432781.9	3.1	0.774741	-2.50814	2.732413	9,750,822,511.48	23.00062
Mali	2009	646609200.6	2.8	0.571186	-2.57128	6.351123	10,181,021,770.43	23.04379
Mali	2010	371569832.6	2.7	0.563265	-2.43374	3.479526	10,678,749,467.47	23.09152
Mali	2011	556147161.6	2.758701	0.472649	-2.40974	4.285272	12,978,107,560.60	23.28653
Mali	2012	397865237.2	2.8843	0.534619	-2.4836	3.197567	12,442,747,897.22	23.2444
Mali	2013	307853389.3	2.8843	0.530091	-2.51456	2.324162	13,245,777,669.82	23.30694
Mauritania	2003	101957951.6	2.621225	0.44366	-2.57594	6.522909	1,563,074,859.52	21.16992
Mauritania	2004	404102025.7	2.621225	0.439684	-2.46298	22.04059	1,833,444,740.38	21.32946
Mauritania	2005	811869181.4	2.621225	0.353052	-2.47386	37.16593	2,184,444,848.98	21.50463
Mauritania	2006	154601638.1	3.1	0.648611	-2.60875	5.084382	3,040,716,679.08	21.83536
Mauritania	2007	139372822.3	2.6	0.473333	-2.44811	4.152007	3,356,757,497.12	21.93424
Mauritania	2008	342770662	2.8	0.615306	-2.47172	8.503265	4,031,047,704.40	22.11729
Mauritania	2009	-3072044.396	2.5	0.486842	-2.44107	-0.08388	3,662,281,667.95	22.02135
Mauritania	2010	130528391.3	2.3	0.383333	-2.3814	3.009098	4,337,791,530.88	22.19063

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Mauritania	2011	588749564.2	2.427348	0.359505	-2.22343	11.39587	5,166,340,390.53	22.36543
Mauritania	2012	1386098851	2.621225	0.42128	-2.3452	26.49649	5,231,255,478.39	22.37792
Mauritania	2013	1126004760	2.621225	0.42128	-2.3452	19.94433	5,645,739,651.54	22.45417
Mauritius	2003	62630665.28	4.4	1.694788	-2.39418	1.116444	5,609,836,354.53	22.44779
Mauritius	2004	13894736.4	4.1	1.426832	-2.51315	0.217592	6,385,691,316.68	22.57733
Mauritius	2005	41776995.78	4.2	1.472936	-2.62332	0.664837	6,283,796,154.76	22.56124
Mauritius	2006	106758059.1	5.1	2.157391	-2.29512	1.585941	6,731,529,167.63	22.63007
Mauritius	2007	340763853.7	4.7	1.89717	-2.19388	4.373223	7,792,052,679.82	22.77637
Mauritius	2008	377724738.1	5.5	2.458111	-1.92895	3.917863	9,641,089,804.87	22.9893
Mauritius	2009	256680711.8	5.4	2.366387	-2.06053	2.905383	8,834,661,042.94	22.90195
Mauritius	2010	429958030.7	5.4	2.374155	-2.14324	4.42424	9,718,233,910.68	22.99727
Mauritius	2011	433358879.7	5.067148	2.105725	-2.28292	3.851262	11,252,386,260.71	23.14385
Mauritius	2012	589018302.8	4.874128	1.940689	-2.34151	5.146217	11,445,657,237.94	23.16088
Mauritius	2013	293341671.7	4.874128	1.940689	-2.34151	2.458473	11,931,866,299.26	23.20248
Morocco	2003	2312682907	3.3	0.958855	-2.48658	4.441995	52,064,058,833.97	24.67574

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Morocco	2004	787053819	3.2	0.839123	-2.49157	1.319984	59,626,020,162.38	24.81136
Morocco	2005	1619752454	3.2	0.755541	-2.61267	2.598129	62,343,022,650.87	24.85592
Morocco	2006	2366000096	3.2	0.698718	-2.64079	3.446928	68,640,825,480.92	24.95215
Morocco	2007	2806642141	3.5	0.988095	-2.67164	3.550845	79,041,539,006.14	25.09324
Morocco	2008	2466288357	3.5	1.038977	-2.50822	2.666048	92,507,257,783.57	25.25055
Morocco	2009	1970323920	3.3	0.921622	-2.4321	2.12097	92,897,320,375.82	25.25476
Morocco	2010	1240625859	3.4	0.960256	-2.43734	1.330904	93,216,746,661.60	25.25819
Morocco	2011	2521362081	3.443408	0.866836	-2.70467	2.487275	101,370,474,295.11	25.34205
Morocco	2012	2841954371	3.338156	0.873831	-2.4013	2.892094	98,266,306,615.36	25.31095
Morocco	2013	3360909924	3.338156	0.876993	-2.41184	3.134146	107,235,262,625.66	25.39829
Mozambique	2003	336698815	2.7	0.507218	-2.57575	6.015306	5,597,367,853.40	22.44556
Mozambique	2004	244703873.4	2.8	0.583458	-2.53039	3.581831	6,831,808,930.40	22.64486
Mozambique	2005	122413755.6	2.8	0.502905	-2.48946	1.584881	7,723,846,194.87	22.76758
Mozambique	2006	251141650.3	2.8	0.451724	-2.50638	3.021406	8,312,078,525.09	22.84098
Mozambique	2007	416689348.4	2.8	0.573214	-2.48646	4.448605	9,366,742,309.49	22.96043

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Mozambique	2008	641399415.8	2.6	0.630662	-2.44679	5.579891	11,494,837,053.41	23.16516
Mozambique	2009	930100407.8	2.5	0.430952	-2.46126	8.523883	10,911,698,208.10	23.1131
Mozambique	2010	1258453097	2.7	0.534694	-2.40361	12.39338	10,154,238,250.18	23.04116
Mozambique	2011	3663937118	2.687722	0.441027	-2.36399	27.9026	13,131,168,011.81	23.29825
Mozambique	2012	5635092659	2.709747	0.46006	-2.39089	38.77105	14,534,278,446.31	23.39978
Mozambique	2013	6697422432	2.709747	0.46006	-2.39089	41.80964	16,018,848,990.67	23.49703
Namibia	2003	65110887.11	4.7	1.881016	-2.43627	1.320356	4,931,312,147.21	22.31887
Namibia	2004	223561311.2	4.1	1.432689	-2.5185	3.383776	6,606,858,786.01	22.61137
Namibia	2005	392758629.4	4.3	1.52489	-2.72319	5.408905	7,261,333,794.60	22.70583
Namibia	2006	609774001.2	4.1	1.370588	-2.66296	7.64249	7,978,734,401.54	22.80005
Namibia	2007	669795195.4	4.5	1.750485	-2.20556	7.662802	8,740,865,600.25	22.89128
Namibia	2008	749771643.8	4.5	1.775813	-2.16909	8.834644	8,486,721,916.91	22.86177
Namibia	2009	496968181.1	4.5	1.722115	-2.41837	5.59889	8,876,191,120.76	22.90664
Namibia	2010	766951872.4	4.4	1.669848	-2.40577	6.797897	11,282,192,605.04	23.14649
Namibia	2011	744490546.9	4.42965	1.614244	-2.45569	5.999297	12,409,629,835.70	23.24174

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Namibia	2012	1077257911	4.392183	1.620919	-2.34281	8.276316	13,016,152,023.59	23.28946
Namibia	2013	853433033.1	4.392183	1.620919	-2.34281	6.709151	12,720,433,346.03	23.26648
Niger	2003	18487601.85	2.542557	0.412048	-2.50611	0.67685	2,731,416,346.48	21.72809
Niger	2004	24367537.69	2.2	0.276508	-2.40756	0.798177	3,052,898,739.47	21.83936
Niger	2005	49733809.25	2.4	0.323218	-2.28403	1.460553	3,405,134,831.85	21.94855
Niger	2006	40274236.62	2.3	0.218182	-2.22121	1.104394	3,646,728,060.06	22.0171
Niger	2007	98942805.39	2.6	0.473333	-2.44811	2.305626	4,291,363,390.91	22.17987
Niger	2008	281935056.4	2.8	0.657682	-2.41683	5.217769	5,403,363,917.31	22.41029
Niger	2009	631278387	2.9	0.633333	-2.525	11.69657	5,397,121,856.35	22.40913
Niger	2010	795859656	2.6	0.527907	-2.42385	13.91706	5,718,589,799.24	22.46699
Niger	2011	1065789606	2.540459	0.3709	-2.32019	16.62914	6,409,169,889.51	22.581
Niger	2012	851019876.2	2.542557	0.375344	-2.33938	12.25863	6,942,209,594.55	22.66089
Niger	2013	719134023.7	2.542557	0.375344	-2.33938	9.378437	7,667,951,987.69	22.76032
Nigeria	2003	2005390033	1.4	0.1	-2.7073	2.964105	67,655,840,108.15	24.9377
Nigeria	2004	1874033035	1.6	0.1	-2.54452	2.133331	87,845,403,978.27	25.19884

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Nigeria	2005	4982533943	1.9	0.119159	-2.37072	4.438849	112,248,324,605.53	25.44398
Nigeria	2006	4854416867	2.2	0.2	-2.25588	3.33798	145,429,764,861.25	25.70296
Nigeria	2007	6034971231	2.2	0.261538	-2.38915	3.62567	166,451,213,395.64	25.83797
Nigeria	2008	8196606673	2.7	0.579143	-2.52277	3.93945	208,064,753,766.47	26.06112
Nigeria	2009	8554840769	2.5	0.486842	-2.44107	5.04766	169,481,317,540.36	25.85601
Nigeria	2010	6026232041	2.4	0.459375	-2.3773	1.632849	369,062,464,570.39	26.63423
Nigeria	2011	8841113287	2.449336	0.349879	-2.2557	2.147237	411,743,801,711.64	26.74367
Nigeria	2012	7069934205	2.149926	0.205239	-2.29179	1.533762	460,953,836,444.36	26.85656
Nigeria	2013	5562873606	2.149926	0.205239	-2.29179	1.08024	514,966,287,206.51	26.96737
Rwanda	2003	4700000	3.383346	0.959161	-2.50029	0.254607	1,845,979,351.35	21.33628
Rwanda	2004	7700000	3.383346	0.912852	-2.49714	0.368564	2,089,188,920.77	21.46004
Rwanda	2005	10500000	3.1	0.673502	-2.55528	0.406746	2,581,465,675.21	21.67162
Rwanda	2006	30643966.47	2.5	0.317647	-2.32696	0.985233	3,110,328,010.91	21.85799
Rwanda	2007	82283165.86	2.8	0.573214	-2.48646	2.179428	3,775,447,705.94	22.05178
Rwanda	2008	103346051.9	3	0.742177	-2.57701	2.154581	4,796,573,531.22	22.29117

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Rwanda	2009	118670000	3.3	0.921622	-2.42469	2.235265	5,308,990,459.48	22.39267
Rwanda	2010	42332000	4	1.318617	-2.51356	0.742856	5,698,548,987.89	22.46348
Rwanda	2011	106210000	4.983419	2.039578	-2.3123	1.657789	6,406,727,230.17	22.58061
Rwanda	2012	159814904.8	3.383346	0.868072	-2.52756	2.213608	7,219,657,132.22	22.70007
Rwanda	2013	257642420.2	3.383346	0.868072	-2.52756	3.425182	7,522,006,198.23	22.7411
Senegal	2003	86305872.18	3.2	0.870462	-2.43679	1.258295	6,858,952,880.10	22.64882
Senegal	2004	137336903.7	3	0.691897	-2.46469	1.710011	8,031,344,381.10	22.80662
Senegal	2005	167877437.2	3.2	0.755541	-2.61267	1.928071	8,707,015,771.00	22.88739
Senegal	2006	289582834.4	3.3	0.764634	-2.88209	3.09426	9,358,710,935.43	22.95957
Senegal	2007	350994490.1	3.6	1.012088	-2.61061	3.110384	11,284,603,070.57	23.14671
Senegal	2008	453902667.5	3.4	1.024762	-2.48442	3.390789	13,386,345,214.54	23.3175
Senegal	2009	330145120.8	3	0.70303	-2.55517	2.576643	12,812,994,418.94	23.27373
Senegal	2010	266107641.3	2.9	0.614516	-2.5327	2.057677	12,932,428,287.60	23.283
Senegal	2011	338218819.4	2.870529	0.550791	-2.39435	2.342126	14,440,676,929.32	23.39331
Senegal	2012	276175403.1	3.163392	0.734943	-2.4581	1.966266	14,045,681,414.37	23.36558

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Senegal	2013	311278297.3	3.163392	0.731433	-2.49512	2.081897	14,951,667,193.55	23.42809
Sierra Leone	2003	8615049.668	2.2	0.357879	-2.35991	0.628174	1,371,442,565.70	21.03913
Sierra Leone	2004	61153314.19	2.3	0.305151	-2.44216	4.272844	1,431,208,677.30	21.08179
Sierra Leone	2005	90731669.74	2.4	0.323218	-2.28403	5.573697	1,627,854,494.80	21.21053
Sierra Leone	2006	58869143.91	2.2	0.2	-2.25588	3.122846	1,885,112,201.85	21.35725
Sierra Leone	2007	95470171.32	2.1	0.2625	-2.43485	4.422993	2,158,496,872.86	21.49268
Sierra Leone	2008	53095074.15	1.9	0.258333	-2.51307	2.119176	2,505,458,705.03	21.64174
Sierra Leone	2009	110430202.5	2.2	0.321739	-2.45952	4.434973	2,489,985,963.18	21.63554
Sierra Leone	2010	238404157.8	2.4	0.458065	-2.36013	9.111181	2,616,610,911.08	21.68515
Sierra Leone	2011	950477689	2.460909	0.342461	-2.28161	31.83586	2,985,556,819.41	21.81705
Sierra Leone	2012	722447242.9	2.240101	0.24094	-2.30448	18.74815	3,853,432,409.29	22.07223
Sierra Leone	2013	429675225.2	2.240101	0.24094	-2.30448	8.664983	4,958,754,472.42	22.32442
South Africa	2003	783136092.3	4.4	1.694788	-2.39418	0.44685	175,256,866,088.54	25.88952
South Africa	2004	701422007.6	4.6	1.788406	-2.50296	0.306842	228,593,703,990.96	26.15521
South Africa	2005	6522098178	4.5	1.668931	-2.57575	2.530173	257,772,766,357.93	26.27534

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
South Africa	2006	623291744.3	4.6	1.812264	-2.342	0.229456	271,638,630,111.50	26.32774
South Africa	2007	6586792253	5.1	2.152632	-2.19024	2.199885	299,415,359,539.56	26.4251
South Africa	2008	9885001293	4.9	2.036304	-2.05208	3.447016	286,769,850,239.68	26.38195
South Africa	2009	7624489974	4.7	1.859259	-2.21837	2.576394	295,936,471,258.13	26.41341
South Africa	2010	3693271715	4.5	1.722138	-2.39	0.983956	375,349,442,837.24	26.65112
South Africa	2011	4139289123	4.080277	1.400536	-2.42419	0.993596	416,596,716,626.96	26.75538
South Africa	2012	4626029122	4.597809	1.763349	-2.31727	1.164114	397,386,418,270.40	26.70817
South Africa	2013	8232518816	4.597809	1.7739	-2.24411	2.248966	366,057,913,372.21	26.62606
Sudan	2003	1349190000	2.3	0.396176	-2.35103	7.645651	17,646,503,525.17	23.5938
Sudan	2004	1511070000	2.2	0.276508	-2.40756	7.042163	21,457,470,202.78	23.78934
Sudan	2005	1561689997	2.1	0.261495	-2.27843	5.887718	26,524,538,565.74	24.00134
Sudan	2006	1841833814	2	0.125	-2.242	5.141569	35,822,408,611.56	24.30184
Sudan	2007	1504379838	1.8	0.25	-2.40526	3.277591	45,898,948,564.06	24.54971
Sudan	2008	1653120315	1.6	0.266667	-2.59833	3.03177	54,526,580,231.56	24.72195
Sudan	2009	1726298403	1.5	0.1	-2.66452	3.247962	53,150,209,167.93	24.69639

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Sudan	2010	2063730998	1.6	0.15	-2.61192	3.144296	65,634,109,236.77	24.90736
Sudan	2011	1734376994	1.563758	0.073462	-2.56322	2.576039	67,327,289,319.73	24.93283
Sudan	2012	2311460740	1.851529	0.152172	-2.42851	3.687194	62,688,889,672.54	24.86145
Sudan	2013	1687884179	1.851529	0.119175	-2.35272	2.53893	66,480,141,187.35	24.92017
Swaziland	2003	-60190680.48	3.140253	0.821821	-2.46752	-3.24647	1,854,032,545.90	21.34063
Swaziland	2004	69582011.84	3.140253	0.790353	-2.40645	2.874523	2,420,645,241.19	21.6073
Swaziland	2005	-45850344.68	2.7	0.425289	-2.46622	-1.77433	2,584,089,443.81	21.67264
Swaziland	2006	121031132.7	2.5	0.317647	-2.32696	4.105612	2,947,943,587.09	21.80437
Swaziland	2007	37493846.24	3.3	0.888	-2.48974	1.227773	3,053,808,158.51	21.83966
Swaziland	2008	105729374.7	3.6	1.092437	-2.66364	3.501229	3,019,779,208.83	21.82845
Swaziland	2009	65705859.52	3.6	1.097619	-2.45211	2.089435	3,144,671,159.00	21.86898
Swaziland	2010	135660413.7	3.2	0.827778	-2.48385	3.845493	3,527,776,867.18	21.98393
Swaziland	2011	93211828.7	3.081774	0.648906	-2.54683	1.878113	4,963,056,465.27	22.32529
Swaziland	2012	89720140.54	3.140253	0.717866	-2.4882	1.826246	4,912,817,417.78	22.31511
Swaziland	2013	29442304.11	3.140253	0.714698	-2.48124	0.64532	4,562,432,041.10	22.24112

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Tanzania	2003	318401298.7	2.5	0.43667	-2.52503	2.730918	11,659,129,888.80	23.17936
Tanzania	2004	442539548.4	2.8	0.583458	-2.53039	3.450385	12,825,801,580.93	23.27472
Tanzania	2005	935520591.7	2.9	0.562349	-2.60669	5.525823	16,929,976,600.14	23.55235
Tanzania	2006	403038991.4	2.9	0.509375	-2.54157	2.165658	18,610,460,326.54	23.64699
Tanzania	2007	581511807	3.2	0.832394	-2.43976	2.704487	21,501,741,757.48	23.7914
Tanzania	2008	1383260000	3	0.747696	-2.55114	5.054226	27,368,386,358.13	24.03265
Tanzania	2009	952630000	2.6	0.493478	-2.47264	3.333931	28,573,777,052.45	24.07576
Tanzania	2010	1813200000	2.7	0.563265	-2.43471	5.773068	31,407,908,612.09	24.17033
Tanzania	2011	1229361018	2.950526	0.60285	-2.3908	3.628721	33,878,631,649.42	24.24605
Tanzania	2012	1799646137	2.838947	0.544951	-2.37915	4.604118	39,087,748,240.44	24.38907
Tanzania	2013	2087261310	2.838947	0.544951	-2.37915	4.708095	44,333,456,244.74	24.51501
Togo	2003	45671000.8	2.497023	0.443779	-2.35081	2.72876	1,673,690,429.62	21.2383
Togo	2004	79824366.06	2.497023	0.414761	-2.34687	4.120872	1,937,074,572.09	21.38444
Togo	2005	95965416.47	2.497023	0.373705	-2.22355	4.537041	2,115,154,262.03	21.47239
Togo	2006	91315553.92	2.4	0.284615	-2.25806	4.145414	2,202,809,251.31	21.513

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Togo	2007	62324369.4	2.3	0.334483	-2.3624	2.469796	2,523,462,557.39	21.6489
Togo	2008	50687212.17	2.7	0.591143	-2.44808	1.602293	3,163,416,242.06	21.87492
Togo	2009	46118873.9	2.8	0.566102	-2.57128	1.458074	3,163,000,528.82	21.87479
Togo	2010	124942198.6	2.4	0.459375	-2.3773	3.937735	3,172,945,644.56	21.87793
Togo	2011	727757280.6	2.382138	0.336454	-2.23355	19.37574	3,756,023,159.96	22.04663
Togo	2012	121518516.1	2.497023	0.354968	-2.32399	3.14276	3,866,617,462.62	22.07565
Togo	2013	195754579.9	2.497023	0.354968	-2.32399	4.796598	4,081,112,865.36	22.12964
Tunisia	2003	539481939	4.9	2.030639	-2.3426	1.965105	27,453,084,982.54	24.03574
Tunisia	2004	592147521.7	5	2.089011	-2.37161	1.898935	31,183,139,301.49	24.16314
Tunisia	2005	712714847.3	4.9	2.019763	-2.32747	2.208393	32,273,007,553.57	24.1975
Tunisia	2006	3239909093	4.6	1.812264	-2.342	9.424248	34,378,437,265.21	24.2607
Tunisia	2007	1515345044	4.2	1.507071	-2.40357	3.894681	38,908,069,299.20	24.38447
Tunisia	2008	2600674976	4.4	1.716739	-2.21754	5.797755	44,856,586,316.05	24.52674
Tunisia	2009	1525244858	4.2	1.509091	-2.33966	3.509946	43,454,935,940.16	24.49499
Tunisia	2010	1334497695	4.3	1.587245	-2.36182	3.029443	44,050,929,160.26	24.50861

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Tunisia	2011	432666011.6	3.759299	1.131852	-2.58054	0.944466	45,810,626,509.45	24.54778
Tunisia	2012	1554269129	4.473255	1.66301	-2.32516	3.450544	45,044,176,963.95	24.53091
Tunisia	2013	1058622582	4.473255	1.670719	-2.35059	2.288639	46,255,554,871.67	24.55745
Uganda	2003	202192593.6	2.2	0.357879	-2.35991	3.19082	6,336,696,288.98	22.56962
Uganda	2004	295416479.8	2.6	0.471879	-2.46075	3.720441	7,940,362,799.18	22.79522
Uganda	2005	379808340.7	2.5	0.366301	-2.3764	4.213616	9,013,834,373.41	22.92203
Uganda	2006	644262499.9	2.7	0.384906	-2.456	6.479821	9,942,597,779.99	23.02009
Uganda	2007	792305780.9	2.8	0.573214	-2.48646	6.445276	12,292,813,603.23	23.23228
Uganda	2008	728860900.7	2.6	0.555844	-2.45833	5.118755	14,239,026,629.64	23.37925
Uganda	2009	841570802.7	2.5	0.430952	-2.44107	4.707251	17,878,178,830.72	23.60685
Uganda	2010	543872727.3	2.5	0.497297	-2.39803	2.694868	20,181,796,802.86	23.72805
Uganda	2011	894293858	2.433897	0.35516	-2.23476	4.413457	20,262,889,523.96	23.73206
Uganda	2012	1205388488	2.5371	0.378489	-2.32431	5.18739	23,236,898,742.13	23.86901
Uganda	2013	1096000000	2.5371	0.378489	-2.32431	4.443911	24,662,957,836.49	23.92857
Zambia	2003	347000000	2.5	0.43667	-2.52503	7.078975	4,901,839,731.27	22.31288

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Zambia	2004	364040000	2.6	0.471879	-2.46075	5.851719	6,221,077,674.78	22.55121
Zambia	2005	356940000	2.6	0.399701	-2.47152	4.284032	8,331,870,169.15	22.84335
Zambia	2006	615790000	2.6	0.351163	-2.43905	4.827129	12,756,858,899.28	23.26933
Zambia	2007	1323900000	2.6	0.473333	-2.44811	9.418112	14,056,957,976.26	23.36638
Zambia	2008	938620000	2.8	0.613283	-2.4949	5.240508	17,910,858,637.90	23.60867
Zambia	2009	694800000	3	0.70303	-2.55517	4.53278	15,328,342,303.96	23.45297
Zambia	2010	1729300000	3	0.709375	-2.46306	8.5332	20,265,552,104.40	23.73219
Zambia	2011	1108500000	3.195245	0.732581	-2.51882	4.725162	23,459,515,284.21	23.87854
Zambia	2012	1731500000	2.766138	0.508087	-2.35739	6.789381	25,503,060,411.46	23.96206
Zambia	2013	2099800000	2.766138	0.508087	-2.35739	7.487114	28,045,517,946.11	24.05709
Zimbabwe	2003	3800000	2.3	0.376575	-2.32593	0.066346	5,727,591,800.00	22.46856
Zimbabwe	2004	8700000	2.3	0.334712	-2.39815	0.149855	5,805,598,400.00	22.48209
Zimbabwe	2005	102800000	2.6	0.356246	-2.48835	1.786206	5,755,215,200.00	22.47337
Zimbabwe	2006	40000000	2.4	0.329502	-2.24815	0.734768	5,443,896,500.00	22.41776
Zimbabwe	2007	68900000	2.1	0.252042	-2.45119	1.301978	5,291,950,100.00	22.38945

Country	Time	FDI_inflows	CPI	CorrD_less corr	CorrD_more corr	FDI_of_GDP	GDP	LN_GDP
Zimbabwe	2008	51600000	1.8	0.366488	-2.49889	1.168557	4,415,702,800.00	22.20843
Zimbabwe	2009	105000000	2.2	0.321739	-2.45952	1.287226	8,157,077,400.00	22.82215
Zimbabwe	2010	165900000	2.4	0.454839	-2.36013	1.760743	9,422,161,300.00	22.96633
Zimbabwe	2011	387000000	2.229767	0.258305	-2.26554	3.532238	10,956,226,600.00	23.11717
Zimbabwe	2012	399500000	2.258863	0.250778	-2.3033	3.223668	12,392,715,500.00	23.24037
Zimbabwe	2013	400000000	2.258863	0.250778	-2.3033	2.965109	13,490,227,100.00	23.32523

10 Appendix 4: Data set Education Index, HDI, Inflation, Infrastructure, Political Stability, Rule of Law, Unemployment, Bureuacracy

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Algeria	2003	0.534936	0.6682	4.27	3.933845	5.288462	-0.54438	23.70000076	25
Algeria	2004	0.548751	0.6776	3.96	5.081225	10.57692	-0.55413	20.10000038	24
Algeria	2005	0.562567	0.687	1.38	6.228605	20.67308	-0.70365	15.30000019	24
Algeria	2006	0.570238	0.6946	2.31	7.375985	15.86539	-0.64449	12.30000019	24
Algeria	2007	0.580687	0.7022	3.67	9.451191	14.42308	-0.71178	13.80000019	24
Algeria	2008	0.59808	0.7098	4.86	10.18	14.83254	-0.70641	11.30000019	24
Algeria	2009	0.615473	0.7174	5.73	11.23	13.27014	-0.75809	10.19999981	24
Algeria	2010	0.631478	0.725	3.91	12.5	11.32076	-0.74908	10	24
Algeria	2011	0.642589	0.73	4.52	14	10.37736	-0.77497	10	24
Algeria	2012	0.642589	0.732	8.89	15.22803	9.952606	-0.75369	11	24
Algeria	2013	0.642589	0.734	3.25	16.5	12.32228	-0.66325	9.800000191	24
Angola	2003	0.338296	0.4254	98.22	1.006347	19.23077	-1.5298	6.900000095	83
Angola	2004	0.35149	0.4372	43.54	1.30678	17.78846	-1.45906	6.900000095	83
Angola	2005	0.364685	0.449	22.96	1.607214	21.15385	-1.44271	6.800000191	83
Angola	2006	0.379923	0.461	13.3	1.907648	28.84615	-1.29697	6.800000191	83
Angola	2007	0.395162	0.473	12.25	3.2	23.55769	-1.39593	6.699999809	83
Angola	2008	0.410401	0.485	12.47	4.6	31.57895	-1.39687	6.800000191	68
Angola	2009	0.42564	0.497	13.73	6	31.75356	-1.24047	6.900000095	68
Angola	2010	0.440879	0.509	14.47	10	37.26415	-1.25579	6.900000095	66
Angola	2011	0.474212	0.521	13.47	14.776	35.37736	-1.24787	6.900000095	66
Angola	2012	0.474212	0.524	10.29	16.93721	35.54502	-1.27635	6.900000095	66
Angola	2013	0.474212	0.53	8.78	19.1	34.12322	-1.27962	6.900000095	66
Benin	2003	0.31068	0.4166	1.49	0.881551	67.78846	-0.51882	0.899999976	35
Benin	2004	0.324673	0.4248	0.87	1.100319	54.80769	-0.59009	1.299999952	34

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Benin	2005	0.338667	0.433	5.36	1.319087	60.57692	-0.59101	1.299999952	34
Benin	2006	0.351515	0.44	3.78	1.537854	62.5	-0.56603	1.100000024	34
Benin	2007	0.364363	0.447	1.3	1.79	55.76923	-0.5511	1.100000024	34
Benin	2008	0.377211	0.454	7.95	1.85	55.98086	-0.5678	1.100000024	34
Benin	2009	0.390059	0.461	2.16	2.24	57.34597	-0.67335	1.200000048	34
Benin	2010	0.402907	0.468	2.31	3.13	52.83019	-0.7007	1	34
Benin	2011	0.413556	0.473	2.71	4.148323	56.60378	-0.7072	1	32
Benin	2012	0.413556	0.475	6.75	4.5	57.8199	-0.63556	1	29
Benin	2013	0.413556	0.477	0.97	4.9	57.8199	-0.6261	1	18
Botswana	2003	0.59484	0.5916	9.19	3.5963	86.05769	0.66833	23.79999924	125
Botswana	2004	0.601087	0.6018	6.95	3.827511	76.92308	0.635057	22.89999962	125
Botswana	2005	0.607333	0.612	8.61	4.058722	84.13461	0.603888	22	125
Botswana	2006	0.603	0.6258	11.56	4.289933	80.28846	0.580817	17.60000038	105
Botswana	2007	0.607	0.6396	7.08	5.28	82.21154	0.612609	18.5	105
Botswana	2008	0.611	0.6534	12.7	6.25	81.33971	0.659515	21.89999962	74
Botswana	2009	0.615	0.6672	8.03	6.15	82.93839	0.654873	18.39999962	59
Botswana	2010	0.619	0.681	6.95	6	82.07547	0.666208	17.89999962	59
Botswana	2011	0.619	0.688	8.46	8	83.49056	0.657604	17.79999924	40
Botswana	2012	0.619	0.691	7.54	11.5	88.15166	0.653666	17.70000076	40
Botswana	2013	0.619	0.696	5.88	15	85.78199	0.585473	17.60000038	41
Burkina Faso	2003		0.1944	2.03	0.354894	43.26923	-0.56387	2.799999952	40
Burkina Faso	2004		0.2592	-0.4	0.447498	41.82692	-0.56235	2.799999952	40
Burkina Faso	2005	0.172256	0.324	6.42	0.540103	43.26923	-0.51244	2.700000048	40
Burkina Faso	2006	0.177811	0.3348	2.33	0.632708	51.92308	-0.41702	2.299999952	34
Burkina Faso	2007	0.1917	0.3456	-0.23	0.75	53.84615	-0.39898	3.299999952	18
Burkina Faso	2008	0.205589	0.3564	10.66	0.92	48.32536	-0.3398	3.299999952	16
Burkina Faso	2009	0.2167	0.3672	2.61	1.13	45.0237	-0.1953	3.299999952	14
Burkina Faso	2010	0.227811	0.378	-0.76	2.4	40.56604	-0.18346	3.299999952	14

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Burkina Faso	2011	0.2417	0.385	2.76	3	28.30189	-0.3662	3.299999952	13
Burkina Faso	2012	0.250033	0.393	3.82	3.725035	26.54029	-0.43095	3.299999952	13
Burkina Faso	2013	0.250033	0.396	0.53	9.1	20.37915	-0.52248	3.299999952	13
Burundi	2003	0.220071	0.3172	10.76	0.367421	1.442308	-1.53715	7.300000191	13
Burundi	2004	0.231219	0.3226	7.85	0.464145	0.961538	-1.59778	7.300000191	13
Burundi	2005	0.242367	0.328	13.52	0.560869	6.730769	-1.18458	7.300000191	13
Burundi	2006	0.281244	0.3404	2.81	0.657593	10.09615	-0.97469	7.199999809	13
Burundi	2007	0.303456	0.3528	8.34	0.7	10.57692	-1.08928	7.199999809	13
Burundi	2008	0.327056	0.3652	24.11	0.81	9.090909	-1.04637	7.199999809	13
Burundi	2009	0.350656	0.3776	10.98	0.9	12.79621	-1.16434	7.099999905	13
Burundi	2010	0.370089	0.39	6.4	1	7.54717	-1.19035	7.099999905	13
Burundi	2011	0.370089	0.392	9.74	1.11	5.188679	-1.11691	7.099999905	13
Burundi	2012	0.370089	0.395	18.01	1.22	5.687204	-1.07855	7	7
Burundi	2013	0.370089	0.397	7.95	1.3	9.952606	-1.04627	7	5
Cameroon	2003	0.387596	0.4484	0.62	1.140432	29.80769	-1.09294	6	45
Cameroon	2004	0.397953	0.4522	0.23	1.436537	31.25	-1.19536	5.099999905	45
Cameroon	2005	0.408311	0.456	2.01	1.732641	40.38462	-1.1807	4.400000095	45
Cameroon	2006	0.406029	0.462	5.12	2.028745	37.01923	-1.13079	4.099999905	45
Cameroon	2007	0.428747	0.468	0.92	2.93	33.17308	-1.16747	4.099999905	38
Cameroon	2008	0.445909	0.474	5.34	3.4	27.27273	-1.0944	4.199999809	38
Cameroon	2009	0.463071	0.48	3.04	3.84	29.38389	-1.11528	4.5	35
Cameroon	2010	0.480233	0.486	1.28	4.3	23.58491	-1.05231	4.099999905	19
Cameroon	2011	0.485789	0.496	2.94	5	26.41509	-1.06163	4.099999905	15
Cameroon	2012	0.485789	0.501	2.94	5.698987	27.48815	-1.039	4.099999905	15
Cameroon	2013	0.485789	0.507	1.95	6.4	28.43602	-1.05104	4.099999905	15
Central African Republic	2003	0.267348	0.319	4.13	0.182277	6.730769	-1.57344	7.099999905	22

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Central African Republic	2004	0.273685	0.322	-2.07	0.225238	8.653846	-1.63292	7	22
Central African Republic	2005	0.280022	0.325	2.88	0.268198	8.653846	-1.48143	7	22
Central African Republic	2006	0.285508	0.3324	6.7	0.311159	5.769231	-1.48996	6.900000095	22
Central African Republic	2007	0.290993	0.3398	0.93	0.375816	6.25	-1.52653	6.900000095	22
Central African Republic	2008	0.296479	0.3472	9.27	1	6.698565	-1.43938	7	23
Central African Republic	2009	0.301964	0.3546	3.52	1.8	4.739336	-1.32068	6.900000095	24
Central African Republic	2010	0.310922	0.362	1.49	2	3.773585	-1.29393	6.900000095	24
Central African Republic	2011	0.317867	0.368	1.3	2.2	4.716981	-1.27212	6.900000095	22
Central African Republic	2012	0.317867	0.373	5.77	3	5.21327	-1.44556	6.900000095	22
Central African Republic	2013	0.317867	0.348	1.5	3.5	3.317536	-1.83426	7.400000095	22
Chad	2003	0.196407	0.3356	-1.75	0.308376	10.09615	-1.3085	6.900000095	62
Chad	2004	0.199741	0.3368	-5.36	0.399266	7.211538	-1.33965	6.699999809	62
Chad	2005	0.203074	0.338	7.89	0.490156	9.615385	-1.45287	7	62
Chad	2006	0.210482	0.3446	8.04	0.581046	6.25	-1.5088	7.099999905	62
Chad	2007	0.217889	0.3512	-8.97	0.847225	5.769231	-1.50602	7.099999905	62
Chad	2008	0.225296	0.3578	10.3	1.19	3.827751	-1.59649	7.099999905	62
Chad	2009	0.236407	0.3644	9.95	1.5	6.161138	-1.4932	7	62
Chad	2010	0.236407	0.371	-2.08	1.7	8.962264	-1.48023	6.900000095	62
Chad	2011	0.255852	0.382	-3.7	1.9	10.84906	-1.4497	7.099999905	53
Chad	2012	0.255852	0.386	14.02	2.1	17.06161	-1.45359	7	60

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Chad	2013	0.255852	0.388	0.15	2.3	15.16588	-1.37249	7.099999905	60
Congo	2003	0.439387	0.4974	-0.63	1.017172	15.38461	-1.18608	6.699999809	37
Congo	2004	0.449205	0.5002	2.43	1.347445	14.90385	-1.15101	6.599999905	37
Congo	2005	0.459023	0.503	3.09	1.677718	15.86539	-1.46088	6.599999905	37
Congo	2006	0.467016	0.5132	6.54	2.00799	17.78846	-1.24007	6.599999905	37
Congo	2007	0.475009	0.5234	2.66	2.759704	21.63461	-1.21237	6.599999905	38
Congo	2008	0.483002	0.5336	7.33	4.28751	21.5311	-1.17107	6.599999905	161
Congo	2009	0.490995	0.5438	5.3	4.5	36.01896	-1.18856	6.5	161
Congo	2010	0.498988	0.554	5	5	33.96227	-1.18336	6.5	161
Congo	2011	0.50516	0.56	1.33	5.6	34.90566	-1.1616	6.599999905	161
Congo	2012	0.511333	0.575	3.89	6.106695	30.80569	-1.11653	6.599999905	161
Congo	2013	0.511333	0.582	5.97	6.6	30.33175	-1.09241	6.599999905	101
Congo, Dem. Rep.	2003	0.308526	0.35	12.87	0.150978	3.37	-1.73	8.199999809	166.00
Congo, Dem. Rep.	2004	0.3123	0.35	3.99	0.199336	1.44	-1.70	8.199999809	133.00
Congo, Dem. Rep.	2005	0.316074	0.36	21.32	0.247695	1.44	-1.57	8.199999809	133.00
Congo, Dem. Rep.	2006	0.319715	0.37	13.05	0.296054	0.96	-1.61	8.199999809	133.00
Congo, Dem. Rep.	2007	0.323356	0.38	16.95	0.370000	2.88	-1.59	8.199999809	132.00
Congo, Dem. Rep.	2008	0.345978	0.39	17.30	0.440000	2.87	-1.56	8.199999809	132.00
Congo, Dem. Rep.	2009	0.349156	0.40	2.80	0.560000	3.79	-1.63	8.199999809	126.00
Congo, Dem. Rep.	2010	0.355111	0.41	7.10	0.720000	2.83	-1.61	8.199999809	84.00
Congo, Dem. Rep.	2011	0.360667	0.42	15.32	1.200000	2.36	-1.61	8.199999809	65.00
Congo, Dem. Rep.	2012	0.371778	0.42	9.72	1.679961	2.84	-1.65	8.199999809	58.00
Congo, Dem. Rep.	2013	0.371778	0.43	1.63	2.200000	2.37	-1.55	8.199999809	31.00
Cote d'Ivoire	2003	0.3263	0.4082	3.3	0.878181	4.807693	-1.45532	4.099999905	62
Cote d'Ivoire	2004	0.334428	0.4116	1.46	1.093754	2.884615	-1.41953	4.099999905	58
Cote d'Ivoire	2005	0.342556	0.415	3.89	1.309328	0.961538	-1.50427	4.099999905	45
Cote d'Ivoire	2006	0.350917	0.4208	2.47	1.524901	3.846154	-1.45988	4.099999905	45
Cote d'Ivoire	2007	0.359278	0.4266	1.89	1.8	5.288462	-1.48509	4.099999905	42

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Cote d'Ivoire	2008	0.367639	0.4324	6.31	1.9	7.177033	-1.4485	4.099999905	40
Cote d'Ivoire	2009	0.376	0.4382	1.02	2	11.37441	-1.26287	4.099999905	40
Cote d'Ivoire	2010	0.384361	0.444	1.23	2.7	8.018867	-1.23635	4.099999905	40
Cote d'Ivoire	2011	0.389222	0.445	4.91	2.9	8.490566	-1.28902	4.099999905	32
Cote d'Ivoire	2012	0.389222	0.452	1.3	5	11.37441	-1.11664	4.099999905	32
Cote d'Ivoire	2013	0.389222	0.458	2.58	8.4	17.06161	-0.93439	4.099999905	8
Egypt, Arab Rep.	2003	0.509529	0.6364	4.51	7.150633	26.44231	0.061045	10.39999962	38
Egypt, Arab Rep.	2004	0.517376	0.6412	11.27	9.320422	22.11539	0.087638	10.69999981	38
Egypt, Arab Rep.	2005	0.525222	0.646	4.87	11.49021	26.44231	0.026409	11.19999981	22
Egypt, Arab Rep.	2006	0.534422	0.653	7.64	13.66	21.15385	-0.19946	10.60000038	19
Egypt, Arab Rep.	2007	0.543622	0.66	9.32	16.03	26.44231	-0.18468	8.899999619	10
Egypt, Arab Rep.	2008	0.552822	0.667	18.32	18.01	28.22967	-0.08566	8.699999809	8
Egypt, Arab Rep.	2009	0.562022	0.674	11.76	20	25.59242	-0.05984	9.399999619	8
Egypt, Arab Rep.	2010	0.573444	0.681	11.27	21.6	19.33962	-0.11533	9	8
Egypt, Arab Rep.	2011	0.573444	0.682	10.05	25.6	6.603774	-0.40351	12	8
Egypt, Arab Rep.	2012	0.573444	0.688	7.12	26.4	7.582938	-0.45967	12.69999981	8
Egypt, Arab Rep.	2013	0.573444	0.689	9.42	29.4	7.109005	-0.60372	13.19999981	8
Equatorial Guinea	2003	0.414911	0.5482	7.32	0.705774	45.67308	-1.43	6.699999809	
Equatorial Guinea	2004	0.414911	0.5556	4.22	0.896914	41.34615	-1.34832	6.5	
Equatorial Guinea	2005	0.414911	0.563	5.63	1.088054	32.21154	-1.44515	6.800000191	177
Equatorial Guinea	2006	0.414911	0.5686	4.42	1.279194	50.96154	-1.43176	6.900000095	154
Equatorial Guinea	2007	0.414911	0.5742	2.8	1.557123	51.92308	-1.35512	6.800000191	155
Equatorial Guinea	2008	0.414911	0.5798	6.55	1.82	52.15311	-1.27634	6.800000191	155
Equatorial Guinea	2009	0.414911	0.5854	4.69	2.13	58.76777	-1.24515	7	155
Equatorial Guinea	2010	0.414911	0.591	7.79	6	53.30189	-1.24625	7	155
Equatorial Guinea	2011	0.414911	0.59	2.48	11.5	50.4717	-1.26807	6.900000095	133
Equatorial Guinea	2012	0.414911	0.584	0.99	13.94318	53.08057	-1.20106	6.900000095	154
Equatorial Guinea	2013	0.414911	0.584	1.17	16.4	50.23697	-1.26346	7	135

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Ethiopia	2003	0.206983	0.3218	17.76	0.162928	9.615385	-0.79876	5.800000191	47
Ethiopia	2004	0.219761	0.3344	3.26	0.21215	12.5	-0.80933	5.400000095	35
Ethiopia	2005	0.232539	0.347	12.94	0.261371	5.769231	-0.86502	5.400000095	35
Ethiopia	2006	0.25202	0.36	12.31	0.310593	7.211538	-0.61949	5.300000191	19
Ethiopia	2007	0.281043	0.373	17.24	0.37	7.211538	-0.59898	5.300000191	19
Ethiopia	2008	0.300524	0.386	44.39	0.45	8.61244	-0.66158	5.199999809	19
Ethiopia	2009	0.305191	0.399	8.47	0.54	7.582938	-0.78435	5.099999905	20
Ethiopia	2010	0.300318	0.412	8.14	0.75	6.603774	-0.75376	5.199999809	20
Ethiopia	2011	0.313744	0.423	33.22	1.1	6.132075	-0.69818	5.199999809	20
Ethiopia	2012	0.316522	0.429	22.77	1.48281	7.109005	-0.65589	5.599999905	20
Ethiopia	2013	0.316522	0.436	8.08	1.9	8.056872	-0.62173	5	19
Gabon	2003	0.560567	0.6392	2.24	3.352671	53.36538	-0.38737	20.79999924	
Gabon	2004	0.5657	0.6416	0.41	4.064847	60.09615	-0.51054	20.89999962	
Gabon	2005	0.570833	0.644	3.71	4.777024	56.25	-0.46244	20.89999962	57
Gabon	2006	0.574533	0.6478	-1.41	5.489201	52.40385	-0.73108	21	57
Gabon	2007	0.578233	0.6516	5.03	5.767005	53.36538	-0.69427	21.10000038	57
Gabon	2008	0.581933	0.6554	5.26	6.21	53.58852	-0.62794	21.20000076	57
Gabon	2009	0.585633	0.6592	1.89	6.7	48.81517	-0.54929	21.29999924	57
Gabon	2010	0.589333	0.663	1.46	7.23	55.66038	-0.51441	20.39999962	57
Gabon	2011	0.589333	0.668	1.27	8	60.37736	-0.44897	20.39999962	57
Gabon	2012	0.589333	0.673	2.66	8.616714	56.87204	-0.45109	20.29999924	57
Gabon	2013	0.589333	0.679	0.48	9.2	58.76777	-0.51649	20.29999924	50
Gambia, The	2003	0.286615	0.4042	17.03	3.079743	56.73077	0.163488	7.099999905	28
Gambia, The	2004	0.296921	0.4106	14.21	3.799059	54.32692	-0.29766	7.099999905	28
Gambia, The	2005	0.307226	0.417	4.84	4.518375	55.76923	-0.28051	7.199999809	28
Gambia, The	2006	0.318066	0.4218	2.06	5.237691	44.71154	-0.30326	7.099999905	27
Gambia, The	2007	0.328905	0.4266	5.37	6.205037	45.67308	-0.24025	7.099999905	32
Gambia, The	2008	0.339744	0.4314	4.44	6.88	47.36842	-0.35622	7.099999905	27

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Gambia, The	2009	0.342678	0.4362	4.56	7.63	49.76303	-0.44333	7	27
Gambia, The	2010	0.345611	0.441	5.05	9.2	50	-0.5106	7	27
Gambia, The	2011	0.345611	0.437	4.8	10.8703	48.11321	-0.50602	7.199999809	27
Gambia, The	2012	0.345611	0.44	4.25	12.44923	44.54976	-0.54363	7	27
Gambia, The	2013	0.345611	0.442	5.7	14	44.54976	-0.58686	7	27
Ghana	2003	0.448749	0.5006	26.67	1.438396	40.38462	-0.00488	8.100000381	21
Ghana	2004	0.454158	0.5058	12.62	1.866656	46.15385	-0.14508	6.900000095	21
Ghana	2005	0.459567	0.511	15.12	2.294916	52.88462	-0.14102	3.799999952	17
Ghana	2006	0.476536	0.5196	10.92	2.723176	46.15385	0.0012	3.599999905	17
Ghana	2007	0.496282	0.5282	10.73	3.85	40.38462	-0.01373	2.799999952	13
Ghana	2008	0.516029	0.5368	16.52	4.27	44.49761	-0.1068	4.300000191	11
Ghana	2009	0.521887	0.5454	19.25	5.44	45.97157	-0.07681	2.200000048	11
Ghana	2010	0.534689	0.554	10.71	7.8	47.64151	-0.063	5.300000191	11
Ghana	2011	0.544411	0.566	8.73	9	52.83019	-0.04237	4.599999905	11
Ghana	2012	0.552744	0.572	9.16	10.6	50.23697	-0.036	3.599999905	11
Ghana	2013	0.552744	0.577	11.61	12.3	46.91943	0.102853	1.799999952	14
Guinea	2003		0.344		0.366459	22.59615	-1.10651	2	48
Guinea	2004		0.351		0.456803	17.30769	-1.24059	2	40
Guinea	2005	0.252778	0.358	31.37	0.547148	15.38461	-1.35513	2	40
Guinea	2006	0.266667	0.364	34.7	0.637492	4.326923	-1.41786	2	40
Guinea	2007	0.277778	0.37	22.84	0.780025	1.923077	-1.46641	2	40
Guinea	2008	0.280556	0.376	18.38	0.92	2.392344	-1.54132	2	40
Guinea	2009	0.280556	0.382	4.68	0.94	2.843602	-1.54015	1.600000024	40
Guinea	2010	0.286111	0.388	15.46	1	4.716981	-1.49858	1.600000024	40
Guinea	2011	0.291667	0.399	21.35	1.3	9.433962	-1.47342	1.700000048	40
Guinea	2012	0.294445	0.409	15.22	1.490144	10.90047	-1.4327	1.700000048	35
Guinea	2013	0.294445	0.411	11.89	1.6	11.37441	-1.41618	1.700000048	16
Kenya	2003	0.452533	0.468	9.82	3.925925	12.98077	-0.89071	9.600000381	60

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Kenya	2004	0.459656	0.475	11.62	5.128546	16.34615	-0.85764	9.600000381	47
Kenya	2005	0.466778	0.482	10.31	6.331168	12.01923	-0.89747	9.5	54
Kenya	2006	0.471889	0.4914	14.45	7.53379	15.38461	-0.88724	9.5	54
Kenya	2007	0.490889	0.5008	9.76	7.95	11.05769	-0.96997	9.399999619	44
Kenya	2008	0.501556	0.5102	26.24	8.67	10.52632	-1.01742	9.399999619	31
Kenya	2009	0.512222	0.5196	9.23	10.04	9.478673	-1.05064	9.399999619	31
Kenya	2010	0.514556	0.529	3.96	14	13.20755	-0.99341	9.300000191	31
Kenya	2011	0.514556	0.535	14.02	28	12.73585	-0.95359	9.199999809	33
Kenya	2012	0.514556	0.539	9.38	32.1	10.42654	-0.86569	9.199999809	32
Kenya	2013	0.514556	0.544	5.72	39	13.74408	-0.74733	9.100000381	32
Lesotho	2003	0.463894	0.4394	6.63	1.595757	46.15385	-0.01373	38.59999847	138
Lesotho	2004	0.4687	0.4382	5.02	2.057074	60.57692	-0.15311	36	138
Lesotho	2005	0.473506	0.437	3.44	2.518391	47.11538	-0.16559	36.40000153	103
Lesotho	2006	0.477414	0.444	6.07	2.979708	41.82692	-0.25775	32.5	73
Lesotho	2007	0.483174	0.451	8.01	3.445431	31.25	-0.3419	26.39999962	73
Lesotho	2008	0.488934	0.458	10.72	3.58	36.36364	-0.26176	25.29999924	39
Lesotho	2009	0.494695	0.465	7.38	3.72	54.9763	-0.23056	28.5	39
Lesotho	2010	0.500455	0.472	3.6	3.86	63.67924	-0.30046	28.29999924	39
Lesotho	2011	0.502307	0.48	5.02	4.2248	59.90566	-0.27289	30.20000076	39
Lesotho	2012	0.504158	0.484	6.1	4.589618	55.92417	-0.28664	27.20000076	29
Lesotho	2013	0.504158	0.494	4.93	5	58.29384	-0.2612	24.60000038	29
Libya	2003	0.64564	0.743	-2.19	2.244047	47.11538	-0.79424	19.70000076	
Libya	2004	0.652598	0.747	-2.2	2.929715	58.17308	-0.81265	19.60000038	
Libya	2005	0.659556	0.751	2.65	3.615384	60.09615	-0.8721	19.5	
Libya	2006	0.667222	0.752	1.46	4.301052	55.76923	-0.99019	19.29999924	
Libya	2007	0.674889	0.753	6.25	4.721999	71.15385	-0.81171	19.10000038	
Libya	2008	0.682556	0.754	10.36	9	73.68421	-0.70401	18.79999924	
Libya	2009	0.690222	0.755	2.46	10.8	74.88152	-0.84785	18.60000038	

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Libya	2010	0.697889	0.756	2.8	14	45.28302	-0.93926	18.5	
Libya	2011	0.697889	0.711	15.52	14	11.79245	-1.17596	17.70000076	
Libya	2012	0.697889	0.745	6.06		6.635071	-1.14804	19.20000076	35
Libya	2013	0.697889	0.738	2.61	16.5	4.739336	-1.36317	19.20000076	35
Madagascar	2003	0.412685	0.4692	-1.22	0.401973	64.90385	-0.20312	5	67
Madagascar	2004	0.4175	0.4736	13.81	0.4705	53.36538	-0.20141	3.799999952	47
Madagascar	2005	0.422315	0.478	18.51	0.539026	44.23077	-0.32514	2.599999905	42
Madagascar	2006	0.430648	0.4832	10.77	0.607552	50.48077	-0.42893	3.900000095	20
Madagascar	2007	0.433426	0.4884	10.3	0.65	43.75	-0.37408	4.099999905	12
Madagascar	2008	0.441759	0.4936	9.22	1.65	29.1866	-0.45412	4.300000191	12
Madagascar	2009	0.455648	0.4988	8.96	1.63	21.32701	-0.7267	4.800000191	12
Madagascar	2010	0.456574	0.504	9.25	1.7	15.09434	-0.85351	3.599999905	12
Madagascar	2011	0.4575	0.505	9.48	1.9	22.64151	-0.861	3.599999905	12
Madagascar	2012	0.458426	0.507	6.36	2.3	27.01422	-0.90144	3.599999905	12
Madagascar	2013	0.458426	0.508	5.83	3	23.22275	-0.89981	3.599999905	12
Malawi	2003	0.382784	0.349	9.58	0.275959	40.86538	-0.24974	7.699999809	43
Malawi	2004	0.381176	0.352	11.43	0.325685	49.51923	-0.12259	7.800000191	37
Malawi	2005	0.379567	0.355	15.41	0.375411	50	-0.12251	7.900000095	37
Malawi	2006	0.387698	0.368	13.97	0.425137	49.03846	-0.24855	7.800000191	37
Malawi	2007	0.387496	0.381	7.95	0.965865	44.71154	-0.18622	7.5	37
Malawi	2008	0.403034	0.394	8.71	0.7	42.10526	-0.13772	7.5	37
Malawi	2009	0.418573	0.407	8.42	1.07	46.91943	-0.12338	7.5	36
Malawi	2010	0.434111	0.42	7.41	2.26	48.58491	-0.1424	7.5	36
Malawi	2011	0.439667	0.429	7.62	3.33	44.81132	-0.17588	7.599999905	36
Malawi	2012	0.439667	0.433	21.27	4.3506	45.0237	-0.24179	7.599999905	37
Malawi	2013	0.439667	0.439	27.28	5.05	38.38863	-0.18744	7.599999905	40
Mali	2003	0.21424	0.3448	-1.35	0.436087	51.92308	-0.02643	8.600000381	33
Mali	2004	0.226776	0.3554	-3.1	0.533933	62.98077	-0.17306	8.800000191	33

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Mali	2005	0.239312	0.366	6.4	0.63178	53.84615	-0.13955	8.5	27
Mali	2006	0.250978	0.3746	1.54	0.729627	57.69231	-0.27672	8.300000191	42
Mali	2007	0.262644	0.3832	1.41	0.81	51.44231	-0.17542	8.5	25
Mali	2008	0.275897	0.3918	9.17	1.57	50.7177	-0.32066	8.399999619	25
Mali	2009	0.286372	0.4004	2.46	1.8	41.70616	-0.35033	8.5	8
Mali	2010	0.29407	0.409	1.11	2	37.73585	-0.44168	8.100000381	8
Mali	2011	0.3015	0.415	2.86	2.2	25.4717	-0.49702	8.100000381	8
Mali	2012	0.305181	0.414	5.43	2.8	3.791469	-0.69256	8.100000381	8
Mali	2013	0.305181	0.416	-0.61	3.5	6.161138	-0.75009	8.100000381	11
Mauritania	2003	0.298484	0.4564	5.15	0.585846	42.78846	-0.50591	32.5	82
Mauritania	2004	0.304609	0.4612	10.37	0.717118	42.30769	-0.68415	32.5	82
Mauritania	2005	0.310733	0.466	12.13	0.84839	37.98077	-0.64557	32.09999847	82
Mauritania	2006	0.32182	0.4704	6.24	0.979661	53.36538	-0.71632	31.79999924	82
Mauritania	2007	0.324573	0.4748	7.25	1.433613	35.57692	-0.63985	31.39999962	50
Mauritania	2008	0.318993	0.4792	7.35	1.87	24.40191	-1.11826	31.20000076	19
Mauritania	2009	0.335636	0.4836	2.22	2.28	19.43128	-0.78604	31.10000038	19
Mauritania	2010	0.338389	0.488	6.28	4	14.62264	-0.86792	31.10000038	19
Mauritania	2011	0.341167	0.489	5.64	4.5	13.67924	-0.88107	31.10000038	19
Mauritania	2012	0.352278	0.498	4.94	5	15.63981	-0.90417	31.10000038	19
Mauritania	2013	0.352278	0.504	4.13	6.2	18.00948	-0.97201	31.10000038	19
Mauritius	2003	0.612594	0.7028	3.92	11.99077	82.69231	1.056726	7.699999809	
Mauritius	2004	0.625424	0.7124	4.71	13.56051	79.80769	1.007987	8.5	46
Mauritius	2005	0.638253	0.722	4.94	15.13026	81.25	1.006921	9.600000381	46
Mauritius	2006	0.64832	0.7288	8.93	16.7	67.78846	0.862413	9.100000381	46
Mauritius	2007	0.655609	0.7356	8.8	20.22	75.96154	0.891133	8.5	7
Mauritius	2008	0.665675	0.7424	9.73	21.81	76.55502	0.991221	7.199999809	6
Mauritius	2009	0.678519	0.7492	2.55	22.51	69.66824	0.952071	7.300000191	6
Mauritius	2010	0.685808	0.756	2.89	28.33	66.50944	0.862825	7.699999809	6

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Mauritius	2011	0.695875	0.762	6.53	34.95	75.9434	0.910734	7.900000095	6
Mauritius	2012	0.718097	0.772	3.85	35.42	79.14692	0.949529	8.699999809	6
Mauritius	2013	0.718097	0.775	3.54	39	77.25118	0.91561	8	6
Morocco	2003	0.38294	0.5556	1.17	10.23249	31.25	-0.05296	11.89999962	35
Morocco	2004	0.395409	0.5648	1.49	13.41206	35.57692	0.016679	10.80000019	12
Morocco	2005	0.407878	0.574	0.98	16.59163	28.84615	-0.1215	11	12
Morocco	2006	0.410984	0.5814	3.28	19.77119	30.76923	-0.25337	9.699999809	12
Morocco	2007	0.422424	0.5888	2.04	21.5	27.40385	-0.26181	9.800000191	12
Morocco	2008	0.431087	0.5962	3.71	33.1	25.83732	-0.28804	9.600000381	12
Morocco	2009	0.439749	0.6036	0.99	41.3	31.27962	-0.19243	9.100000381	12
Morocco	2010	0.453967	0.611	0.99	52	33.01887	-0.1568	9.100000381	12
Morocco	2011	0.467856	0.621	0.92	46.10748	33.96227	-0.22302	8.899999619	12
Morocco	2012	0.467856	0.623	1.28	55.41605	32.22749	-0.21413	9	12
Morocco	2013	0.467856	0.626	1.89	56	29.85782	-0.25594	9.199999809	11
Mozambique	2003	0.283283	0.3348	13.43	0.476274	51.44231	-0.67824	22.70000076	168
Mozambique	2004	0.303555	0.3464	12.66	0.598501	44.71154	-0.65238	22.70000076	174
Mozambique	2005	0.323826	0.358	7.17	0.720727	51.44231	-0.61226	22.60000038	174
Mozambique	2006	0.334179	0.3666	13.24	0.842954	61.05769	-0.60527	22.60000038	116
Mozambique	2007	0.352866	0.3752	8.16	0.91	54.80769	-0.60476	22.60000038	31
Mozambique	2008	0.365996	0.3838	10.33	1.56	56.45933	-0.60764	22.60000038	33
Mozambique	2009	0.373572	0.3924	3.25	2.68	66.82465	-0.59211	22.60000038	33
Mozambique	2010	0.372814	0.401	12.7	4.17	57.07547	-0.4712	22.60000038	19
Mozambique	2011	0.372056	0.405	10.35	4.3	57.54717	-0.5704	22.60000038	19
Mozambique	2012	0.372056	0.408	2.68	4.8491	58.29384	-0.59814	22.60000038	19
Mozambique	2013	0.372056	0.413	4.26	5.4	37.44076	-0.84095	22.5	19
Namibia	2003	0.512049	0.5638	7.14	3.021805	59.61538	0.248138	18.79999924	85
Namibia	2004	0.513558	0.5664	4.14	3.480827	68.26923	-0.00431	21.89999962	85
Namibia	2005	0.515067	0.569	2.28	3.939849	65.86539	-0.07344	20.20000076	95

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Namibia	2006	0.513869	0.5772	4.96	4.398871	70.67308	0.136006	21.70000076	95
Namibia	2007	0.515449	0.5854	6.55	4.835611	84.13461	0.11674	19.39999962	99
Namibia	2008	0.517029	0.5936	9.09	5.329004	92.82297	0.366438	37.59999847	66
Namibia	2009	0.518609	0.6018	9.45	6.5	79.62085	0.217036	29.70000076	66
Namibia	2010	0.520189	0.61	4.87	11.6	74.0566	0.194186	22.10000038	66
Namibia	2011	0.520189	0.616	5.01	12	73.1132	0.172939	19.79999924	66
Namibia	2012	0.520189	0.62	6.72	12.9414	78.19905	0.238183	16.70000076	66
Namibia	2013	0.520189	0.625	5.6	13.9	76.30331	0.255479	19	66
Niger	2003	0.136145	0.2762	-1.61	0.165148	41.82692	-0.66114	5	35
Niger	2004	0.142334	0.2826	0.26	0.20811	28.36539	-0.73057	5	35
Niger	2005	0.148522	0.289	7.8	0.251072	30.76923	-0.80002	5.099999905	35
Niger	2006	0.152293	0.2964	0.04	0.294034	39.42308	-0.63761	5.099999905	31
Niger	2007	0.158842	0.3038	0.05	0.390391	28.84615	-0.65946	5.099999905	23
Niger	2008	0.165391	0.3112	11.31	0.7	23.92344	-0.73131	5.099999905	19
Niger	2009	0.17194	0.3186	0.58	0.76	14.69194	-0.52307	5.099999905	17
Niger	2010	0.184044	0.326	0.8	0.83	12.73585	-0.52058	5.099999905	17
Niger	2011	0.192378	0.333	2.94	1.3	19.81132	-0.39289	5.099999905	17
Niger	2012	0.197933	0.342	0.46	1.4077	14.69194	-0.694	5.099999905	17
Niger	2013	0.197933	0.345	2.3	1.7	9.00474	-0.72599	5.099999905	17
Nigeria	2003		0.2802	14.03	2.804558	5.769231	-1.52285	7.599999905	
Nigeria	2004		0.3736	15	3.718051	4.807693	-1.43203	7.699999809	
Nigeria	2005	0.415333	0.467	17.86	4.631544	6.25	-1.3613	7.599999905	
Nigeria	2006	0.417239	0.4722	8.24	5.545036	2.884615	-1.08112	7.599999905	
Nigeria	2007	0.419144	0.4774	5.38	6.77	3.846154	-1.06521	7.599999905	
Nigeria	2008	0.421049	0.4826	11.58	15.86	5.263158	-1.05953	7.599999905	
Nigeria	2009	0.422955	0.4878	11.54	20	4.265403	-1.16418	7.599999905	
Nigeria	2010	0.42486	0.493	13.72	24	3.301887	-1.17335	7.599999905	
Nigeria	2011	0.42486	0.499	10.84	28.43	3.301887	-1.21556	7.599999905	

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Nigeria	2012	0.42486	0.505	12.22	32.8	3.317536	-1.18171	7.5	
Nigeria	2013	0.42486	0.511	8.48	38	3.791469	-1.16149	7.5	30.8
Rwanda	2003	0.305398	0.3678	7.45		15.86539	-0.8766	0.600000024	18
Rwanda	2004	0.314527	0.3794	12.25		14.42308	-0.80809	0.600000024	18
Rwanda	2005	0.323656	0.391	9.01		19.23077	-0.91557	0.600000024	18
Rwanda	2006	0.355113	0.4034	8.88		25.48077	-0.66297	0.600000024	16
Rwanda	2007	0.356016	0.4158	9.08	2.115387	34.13462	-0.5737	0.600000024	16
Rwanda	2008	0.35414	0.4282	15.44	4.5	33.49282	-0.47906	0.600000024	14
Rwanda	2009	0.366153	0.4406	10.39	7.7	29.85782	-0.49376	0.600000024	7
Rwanda	2010	0.375389	0.453	2.31	8	38.67924	-0.30219	0.600000024	7
Rwanda	2011	0.3865	0.464	5.67	7	41.50943	-0.30822	0.600000024	7
Rwanda	2012	0.478167	0.476	6.27	8.023854	39.33649	-0.26326	0.600000024	8
Rwanda	2013	0.478167	0.479	4.23	9	43.60189	-0.1477	0.600000024	7
Senegal	2003	0.293998	0.4052	-0.03	3.007853	36.05769	-0.07973	8.699999809	57
Senegal	2004	0.303238	0.4136	0.51	3.875815	45.67308	-0.01739	9.100000381	57
Senegal	2005	0.312478	0.422	1.7	4.743777	39.42308	-0.01459	9.199999809	57
Senegal	2006	0.323544	0.4288	2.11	5.611739	35.09615	-0.24688	10	57
Senegal	2007	0.329056	0.4356	5.85	6.89	36.05769	-0.25158	8.800000191	58
Senegal	2008	0.3429	0.4424	5.77	7.12	39.23445	-0.28903	9.399999619	9
Senegal	2009	0.356744	0.4492	-2.25	7.5	38.38863	-0.37055	9.899999619	9
Senegal	2010	0.363644	0.456	1.23	8	31.60377	-0.40281	9.100000381	9
Senegal	2011	0.367811	0.458	3.4	9.8	37.73585	-0.48351	10.39999962	6
Senegal	2012	0.367811	0.461	1.42	10.8	41.23223	-0.31995	10.30000019	6
Senegal	2013	0.367811	0.463	0.7	13.1	44.07583	-0.26995	10.30000019	6
Sierra Leone	2003	0.280889	0.326	7.6	0.172962	18.26923	-1.21135	3.400000095	26
Sierra Leone	2004	0.283278	0.335	14.19	0.191198	29.80769	-1.17412	3.400000095	26
Sierra Leone	2005	0.285667	0.344	12.05	0.209434	34.13462	-1.18272	3.400000095	26
Sierra Leone	2006	0.287733	0.3528	9.54	0.227669	37.98077	-1.0349	3.400000095	26

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Sierra Leone	2007	0.2898	0.3616	11.66	0.239835	42.78846	-1.0269	3.400000095	26
Sierra Leone	2008	0.291867	0.3704	-35.84	0.25	37.32058	-0.96241	3.400000095	17
Sierra Leone	2009	0.293933	0.3792	9.25	0.26	34.59716	-0.91886	3.400000095	12
Sierra Leone	2010	0.296	0.388	16.64	0.58	36.32076	-0.95582	3.400000095	12
Sierra Leone	2011	0.3045	0.394	16.19	0.9	40.56604	-0.87674	3.400000095	12
Sierra Leone	2012	0.3045	0.397	12.87	1.3	37.44076	-0.87294	3.400000095	12
Sierra Leone	2013	0.3045	0.408	10.27	1.7	40.75829	-0.88214	3.400000095	12
South Africa	2003	0.65769	0.6206	5.86	6.47785	34.13462	0.043203	27.10000038	36
South Africa	2004	0.658506	0.6168	1.39	6.85428	39.90385	0.089017	24.70000076	36
South Africa	2005	0.659323	0.613	3.4	7.23071	41.34615	0.077486	23.79999924	33
South Africa	2006	0.661081	0.619	4.64	7.60714	47.11538	0.237213	22.60000038	33
South Africa	2007	0.666429	0.625	7.1	8.065375	50.96154	0.073489	22.29999924	31
South Africa	2008	0.66909	0.631	11.54	8.43	45.93301	0.03404	22.70000076	22
South Africa	2009	0.682194	0.637	7.13	10	41.23223	0.092992	23.70000076	22
South Africa	2010	0.684515	0.643	4.26	24	46.69811	0.10755	24.70000076	22
South Africa	2011	0.687192	0.651	5	33.97	48.58491	0.120726	24.70000076	19
South Africa	2012	0.695447	0.659	5.65	41	43.12796	0.075322	25	19
South Africa	2013	0.695447	0.663	5.45	46.5	45.0237	0.120242	24.60000038	19
Sudan	2003	0.239223	0.4192	7.71		3.846154	-1.57621	14.80000019	
Sudan	2004	0.250297	0.4256	8.42		5.769231	-1.48403	14.80000019	37
Sudan	2005	0.261372	0.432	8.52		3.365385	-1.59836	14.69999981	37
Sudan	2006	0.271986	0.4386	7.2		1.923077	-1.30903	14.80000019	37
Sudan	2007	0.2826	0.4452	7.98	8.66	2.403846	-1.38515	14.69999981	37
Sudan	2008	0.293215	0.4518	14.31		1.913876	-1.41498	14.80000019	37
Sudan	2009	0.303829	0.4584	11.25		0.947867	-1.23448	14.60000038	35
Sudan	2010	0.305956	0.465	13.25	16.7	0.943396	-1.29618	14.60000038	35
Sudan	2011	0.305956	0.466	22.11	17.30391	0.943396	-1.2215	14.60000038	35
Sudan	2012	0.305956	0.476	37.39	21	2.369668	-1.20849	14.60000038	35

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Sudan	2013	0.305956	0.477	29.96	22.7	2.843602	-1.25251	14.60000038	36
Swaziland	2003	0.480073	0.496	7.29	2.311365	43.75	-0.75095	22.79999924	60
Swaziland	2004	0.487087	0.496	3.45	2.77309	46.63462	-0.8315	22.89999962	60
Swaziland	2005	0.4941	0.496	4.77	3.234814	35.57692	-0.87	22.89999962	60
Swaziland	2006	0.514427	0.5018	5.3	3.696539	34.13462	-0.68507	22.89999962	60
Swaziland	2007	0.522531	0.5076	8.08	4.1	44.23077	-0.77793	23	60
Swaziland	2008	0.530636	0.5134	12.66	6.85	41.14833	-0.63808	23	60
Swaziland	2009	0.53874	0.5192	7.45	8.94	44.54976	-0.61391	22.89999962	60
Swaziland	2010	0.546844	0.525	4.51	11.04	43.86792	-0.49143	22.79999924	56
Swaziland	2011	0.551289	0.528	6.11	18.13	30.18868	-0.4543	22.70000076	56
Swaziland	2012	0.551289	0.529	8.94	20.78178	33.64929	-0.4603	22.5	56
Swaziland	2013	0.551289	0.53	5.62	24.7	31.75356	-0.42147	22.29999924	38
Tanzania	2003	0.351398	0.4256	5.3	0.708597	21.15385	-0.28643	3.5	34
Tanzania	2004	0.360224	0.4368	4.74	0.905731	24.51923	-0.36116	3	34
Tanzania	2005	0.369051	0.448	5.03	1.102866	28.36539	-0.26014	2.5	34
Tanzania	2006	0.37891	0.4584	7.25	1.3	33.17308	-0.441	4.300000191	31
Tanzania	2007	0.38877	0.4688	7.03	1.6	32.69231	-0.3564	2	30
Tanzania	2008	0.39863	0.4792	10.28	1.9	37.79904	-0.34491	2.5	29
Tanzania	2009	0.40095	0.4896	12.14	2.4	47.8673	-0.47625	2.5	29
Tanzania	2010	0.40327	0.5	6.2	2.9	46.22641	-0.48976	3	29
Tanzania	2011	0.425889	0.506	12.69	3.2	46.22641	-0.53693	3.5	29
Tanzania	2012	0.425889	0.51	16	3.95	46.4455	-0.55898	3.200000048	26
Tanzania	2013	0.425889	0.516	7.87	4.4	41.23223	-0.50443	2.900000095	26
Togo	2003	0.430291	0.4332	-0.96	1.4	36.53846	-0.98252	7.099999905	74
Togo	2004	0.438084	0.4356	0.39	1.6	34.13462	-1.13224	7.099999905	63
Togo	2005	0.445878	0.438	6.8	1.8	7.692307	-1.0945	7.099999905	63
Togo	2006	0.460142	0.4422	2.23	2	27.88461	-0.97606	7.099999905	62
Togo	2007	0.449407	0.4464	0.96	2.2	32.21154	-0.89803	7.099999905	60

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Togo	2008	0.466449	0.4506	8.68	2.4	38.27751	-0.78115	7.099999905	60
Togo	2009	0.483491	0.4548	3.31	2.6	38.86256	-0.88097	7	84
Togo	2010	0.500533	0.459	1.83	3	38.20755	-0.91348	7	84
Togo	2011	0.514422	0.468	3.57	3.5	39.62264	-0.86332	7	84
Togo	2012	0.514422	0.47	2.63	4	34.12322	-0.94046	7	38
Togo	2013	0.514422	0.473	1.77	4.5	35.07109	-1.01451	6.900000095	19
Tunisia	2003	0.558089	0.6744	2.71	7.868574	56.25	-0.0862	14.5	11
Tunisia	2004	0.569044	0.6812	3.63	9.574519	50.48077	0.145145	13.89999962	11
Tunisia	2005	0.58	0.688	2.02	11.28046	47.59615	0.097936	14.19999981	11
Tunisia	2006	0.588291	0.6932	4.49	12.98641	53.84615	0.201595	12.5	11
Tunisia	2007	0.596582	0.6984	3.42	17.1	50.48077	0.172598	12.39999962	11
Tunisia	2008	0.604873	0.7036	4.92	27.53	49.2823	0.139754	12.39999962	11
Tunisia	2009	0.610387	0.7088	3.52	34.07	47.39336	0.199438	13.30000019	11
Tunisia	2010	0.618678	0.714	4.42	36.8	44.33962	0.121903	13	11
Tunisia	2011	0.621456	0.715	3.54	39.1	34.43396	-0.1353	18.29999924	11
Tunisia	2012	0.621456	0.719	5.14	41.4416	22.27488	-0.1554	14	11
Tunisia	2013	0.621456	0.72	5.8	43.8	18.48341	-0.20932	13.30000019	11
Uganda	2003	0.439994	0.4152	8.68	1.346539	6.25	-0.54036	3.200000048	34
Uganda	2004	0.444684	0.4226	3.72	1.740813	11.53846	-0.63475	2.5	34
Uganda	2005	0.449375	0.43	8.45	2.135088	8.173077	-0.56264	2	34
Uganda	2006	0.445784	0.4386	7.31	2.529363	13.94231	-0.33599	3.599999905	28
Uganda	2007	0.451916	0.4472	6.14	3.671965	18.26923	-0.37946	3	28
Uganda	2008	0.46638	0.4558	12.05	7.9	17.22488	-0.37791	3.599999905	25
Uganda	2009	0.47529	0.4644	13.02	9.78	17.06161	-0.41831	4.199999809	25
Uganda	2010	0.478644	0.473	3.98	12.5	16.03773	-0.39135	4.199999809	24
Uganda	2011	0.478644	0.473	18.69	13.01354	17.92453	-0.34771	4.199999809	33
Uganda	2012	0.478644	0.476	14.02	14.6896	19.43128	-0.35859	4.199999809	36
Uganda	2013	0.478644	0.478	5.46	16.2	19.90521	-0.35878	4.199999809	35

Country	Time	Education index	HDI	Inflation	Infrastructure	Political_stability	Rule_of_Law	Unemployment	Bureuacracy
Zambia	2003	0.51769	0.4672	21.4	2.175493	49.03846	-0.47007	15.19999981	35
Zambia	2004	0.527748	0.4786	17.97	2.836966	51.92308	-0.52199	15.30000019	35
Zambia	2005	0.537805	0.49	18.32	3.49844	48.55769	-0.57597	15.89999962	35
Zambia	2006	0.545682	0.503	9.02	4.159913	56.25	-0.59015	15.60000038	35
Zambia	2007	0.55356	0.516	10.66	4.87	56.73077	-0.57407	15.19999981	33
Zambia	2008	0.561437	0.529	12.45	5.55	60.28708	-0.43979	15.60000038	18
Zambia	2009	0.569314	0.542	13.4	6.31	65.40285	-0.48505	14.80000019	18
Zambia	2010	0.577192	0.555	8.5	10	62.26415	-0.49781	13.19999981	18
Zambia	2011	0.584262	0.565	6.43	11.5	62.73585	-0.46788	13.19999981	18
Zambia	2012	0.591333	0.576	6.58	13.4682	65.40285	-0.40269	13.10000038	17.5
Zambia	2013	0.591333	0.58	6.98	15.4	60.66351	-0.30706	13.10000038	7.5
Zimbabwe	2003	0.478493	0.4178	431.7	5.096638	17.78846	-1.68099	4.5	131
Zimbabwe	2004	0.48088	0.4144	282.38	6.661706	12.98077	-1.75804	4.199999809	93
Zimbabwe	2005	0.483267	0.411	302.12	8.226774	12.98077	-1.76687	4.599999905	93
Zimbabwe	2006	0.4866	0.421	1096.68	9.791842	18.75	-1.72556	5.099999905	93
Zimbabwe	2007	0.489933	0.431	24411.03	10.85	15.38461	-1.78467	5.099999905	93
Zimbabwe	2008	0.493267	0.441		11.4	13.39713	-1.76562	5.699999809	93
Zimbabwe	2009	0.4966	0.451		11.36	14.21801	-1.84183	6.400000095	93
Zimbabwe	2010	0.499933	0.461	3.03	11.5	14.15094	-1.81321	5.5	86
Zimbabwe	2011	0.499933	0.474	3.28	15.7	19.33962	-1.77779	5.400000095	86
Zimbabwe	2012	0.499933	0.491	3.92	17.09	21.80095	-1.61177	5.300000191	86
Zimbabwe	2013	0.499933	0.501	1.63	18.5	24.64455	-1.56021	5.300000191	90